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COLONIAL REPORTS—MISCELLANEOUS.

No. 16.

329.

SELECTIONS FROM
COLONIAL MEDICAL REPORTS
FOR 1898 AND 1899.

Presented to both Houses of Parliament by Command of His Majesty.
May, 1901.



LONDON:
PRINTED FOR HIS MAJESTY'S STATIONERY OFFICE,
By DARLING & SON, LTD., 34-40, BACON STREET, E

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EYRE & SPOTTISWOODE, EAST HARDING STREET, FLEET STREET, E.C.,
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9.

COLONIAL REPORTS.

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8	Western Pacific	British Solomon Islands.
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No. 1.

BASUTOLAND.

1899.

HIGH COMMISSIONER SIR ALFRED MILNER to MR. CHAMBERLAIN.

Government House,
Cape Town,
7th May, 1900.

SIR,

I HAVE the honour to enclose for your information, with reference to your circular despatch of the 25th July, 1898, a Despatch and enclosures from the Resident Commissioner, on the subject of the Basutoland Medical Report for 1899.

I have, &c.,

A. MILNER,

Governor and High Commissioner.

Enclosure in No. 1.

From the RESIDENT COMMISSIONER, Basutoland, to the HIGH COMMISSIONER, Cape Town.

Resident Commissioner's Office,
Basutoland,
24th April, 1900.

SIR,

I HAVE the honour to transmit a copy of the special Medical Report for Basutoland for the year ended 31st December, 1899, suggested in the Secretary of State's Circular Despatch of the 25th July, 1898.

I have, &c.,

G. Y. LAGDEN,

Resident Commissioner.

His Excellency

THE HIGH COMMISSIONER, &c., &c., &c.

BASUTOLAND
1899.

BASUTOLAND MEDICAL REPORT FOR THE YEAR ENDING 31st DECEMBER, 1899.

The estimated population for the year 1899 was 270,000, which number includes about 700 Europeans. These figures are obtained by assuming that the rate of increase since the last census has equalled that which obtained between 1875 and 1891. In these two years the numbers were:—

—		1875.	—		1891.
Native ...	...	127,707	Native ...	...	218,324
European ...	...	469	European ...	...	578

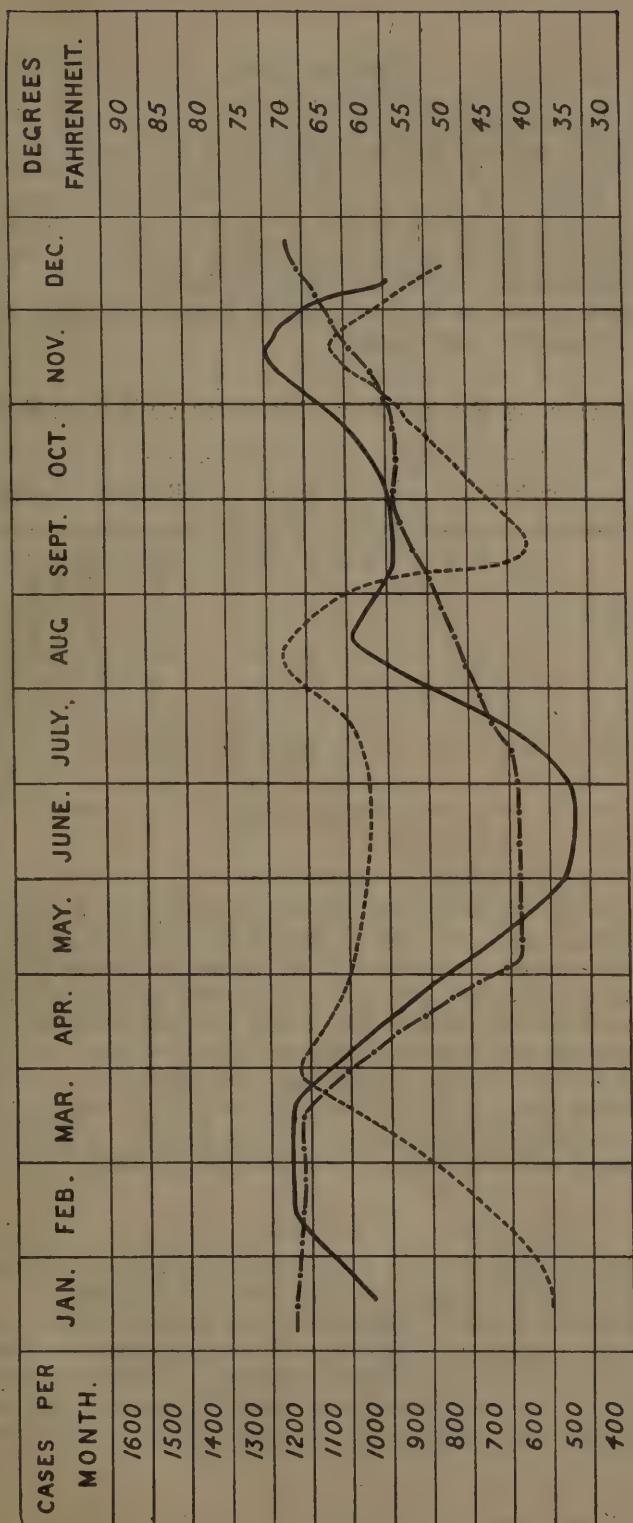
There is no registration of births and deaths (except in the case of Europeans) in Basutoland, but from information obtained from a recent census of the Leribe District, the birth rate was computed to be 46 per 1000 and the death rate 20.30 per 1000.

I think these figures may be fairly taken to represent the average birth and death rate throughout the country.

During the last decade the population has been considerably augmented by immigration.

From the accompanying chart it will be seen that, for all diseases taken together, the incidence of sickness is greatest in the summer and least in the winter months, following the curve of the mean temperature. The sudden increase of sickness in August is probably traceable to the unusually wet winter and high mean humidity during July and August, which are usually the driest months of the year. In an average year the dotted line of the chart would have been much lower during July and August.

CHART SHOWING COMPARISON BETWEEN SICKNESS CURVE AND CURVES OF MEAN TEMPERATURE AND MEAN HUMIDITY DURING THE YEAR 1899.



Plain line = sickness curve.

Dot and dash = curve of mean temperature.

Dotted line = curve of mean humidity.

For convenience the numbers indicating the degrees Fahrenheit are used in drawing this curve.

BASUTO-
LAND,
1899.

SMALL POX.

The figures in the Return "C," under the heading of Small Pox, refer entirely to two epidemics which occurred in the Leribe District. Statistics of these two epidemics were supplied by Dr. Macfarlane, and are appended. They show that, while the liability to infection was about equal in the vaccinated and unvaccinated, the death rate in the former was only '85 per cent., against a mortality of 12 per cent. in the latter.

Recent epidemics of small pox in Basutoland have, on the whole, been of a mild nature.

STATISTICS OF SMALL POX EPIDEMIC AT BUTHE BUTHE.

No. of Villages Infected	Population.			No. of people attacked by Small Pox.	No. who Recovered.	No. who died.	Recoveries.		Deaths.	
	Total Population.	Vaccinated.	Unvaccinated.				Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.
17	1,268	936	332	175	127	48	121	6	8	40

TUBERCLE.

The rarity of tubercular disease is worthy of notice. The majority of cases are young adults or young children with tubercular cervical glands or joint disease, the knee being the joint most commonly affected. Pulmonary tuberculosis is rare and is chiefly met with in young men who have contracted the disease at one of the mining centres. In these cases the formation of cavities is most exceptional, the chief characteristic of the disease being a slow fibroid degeneration of the lung, with marked constitutional cachexia. There appears to be little or no seasonal variation in the incidence of this disease.

SYPHILIS.

Syphilis claims 11·6 per cent. of the total number of patients treated during the year. Of 1,346 cases the primary lesion was only observed in nine. The inability of patients to indicate the site of the primary sore is one of the most remarkable features of the disease as it occurs in this country. In whatever way the contagion is carried, quite 99 per cent. of the patients are unable to give any information on this point. The first symptom is

generally a slight pharyngitis, followed in from three to four weeks by a sparsely distributed papular eruption, which, in most situations, assumes the form of condylomata. With or without treatment this eruption disappears in from three to six months, leaving pigmented spots on the skin, the pigmentation persisting for a considerable time. No further manifestation of syphilis occurs for some years, when tertiary lesions of almost endless variety occur, the most common and distressing being phagadæmic ulceration of the fauces and nares, and rupial sores on the trunk and extremities. Syphilitic laryngitis, as an early secondary symptom, is common in children and young adults. The mortality from the disease in the acquired variety is, I believe, low, but there is a high mortality among the children of syphilitic parentage.

In spite of the fact that such a large percentage of the patients attending the hospitals every year are suffering from syphilis, I think that disease is tending to disappear. It is now the exception rather than the rule to find a case of syphilis on the reserve at any of the Magistracies.

RHEUMATISM.

Rheumatism seldom assumes a severe type. The cases are mostly muscular rheumatism. Rheumatic fever cases are seldom seen in the out-patient department, but in the few instances of valvular lesions which come under our notice a history of an acute attack is generally obtainable.

DISEASES OF THE EYE.

Conjunctivitis is always epidemic in the summer months. The severity of the disease varies in different years. During the year now under review it was of a mild type.

Trachoma is not common, and is seldom followed by any deformity of the lids.

Cataract (senile) is frequently met with.

DISEASES OF THE CIRCULATORY SYSTEM.

Diseases of the circulatory system comprise valvular and functional lesions of the heart, and two cases of aneurism in syphilitic male adults.

Atheroma is almost unknown, and I do not remember ever seeing a case of varicose veins in a pure bred native.

DISEASES OF THE RESPIRATORY SYSTEM.

An epidemic of whooping cough caused a high mortality amongst the children during the latter half of the year. Apart from the disease, the general mortality from the class of disease now under notice is low.

BASUTO-
LAND
1899.

Pneumonia is rare. Bronchial catarrh forms the bulk of the cases.

DISEASES OF THE DIGESTIVE SYSTEM.

Diseases of the digestive system form one-fourth of the total number of cases treated. They are almost entirely functional disorders, due to errors of diet. The diet of the average person is mainly farinaceous and insufficiently cooked. The staple article of diet among adults is "leteng," a kind of beer, containing a very small percentage of alcohol, and prepared from millet.

SKIN.

Skin complaints are chiefly impetigo scabies and eczema.

PARASITES.

Parasites met with comprise Ascarides Tape Worm and Hydatid, the last-mentioned being rare. Two cases of filarial diseases (*Filaria Perstans*) have been recorded as occurring in people who had never been out of the Territory.*

RELATIVE MORTALITY IN THE DIFFERENT SEASONS.

In the absence of any system of registration, any conclusions concerning this section can only be based on hearsay evidence. The highest general mortality occurs in the spring and summer months; the lowest during the cold season.

Infantile diarrhoea seems to be particularly fatal in the late spring and early summer.

The most noticeable feature of the weather in 1899 was the heavy winter and spring rainfall. The total rainfall for the year was 2.13 inches above the average of the preceding four years. It was more evenly distributed over the 12 months than is usual in this country.

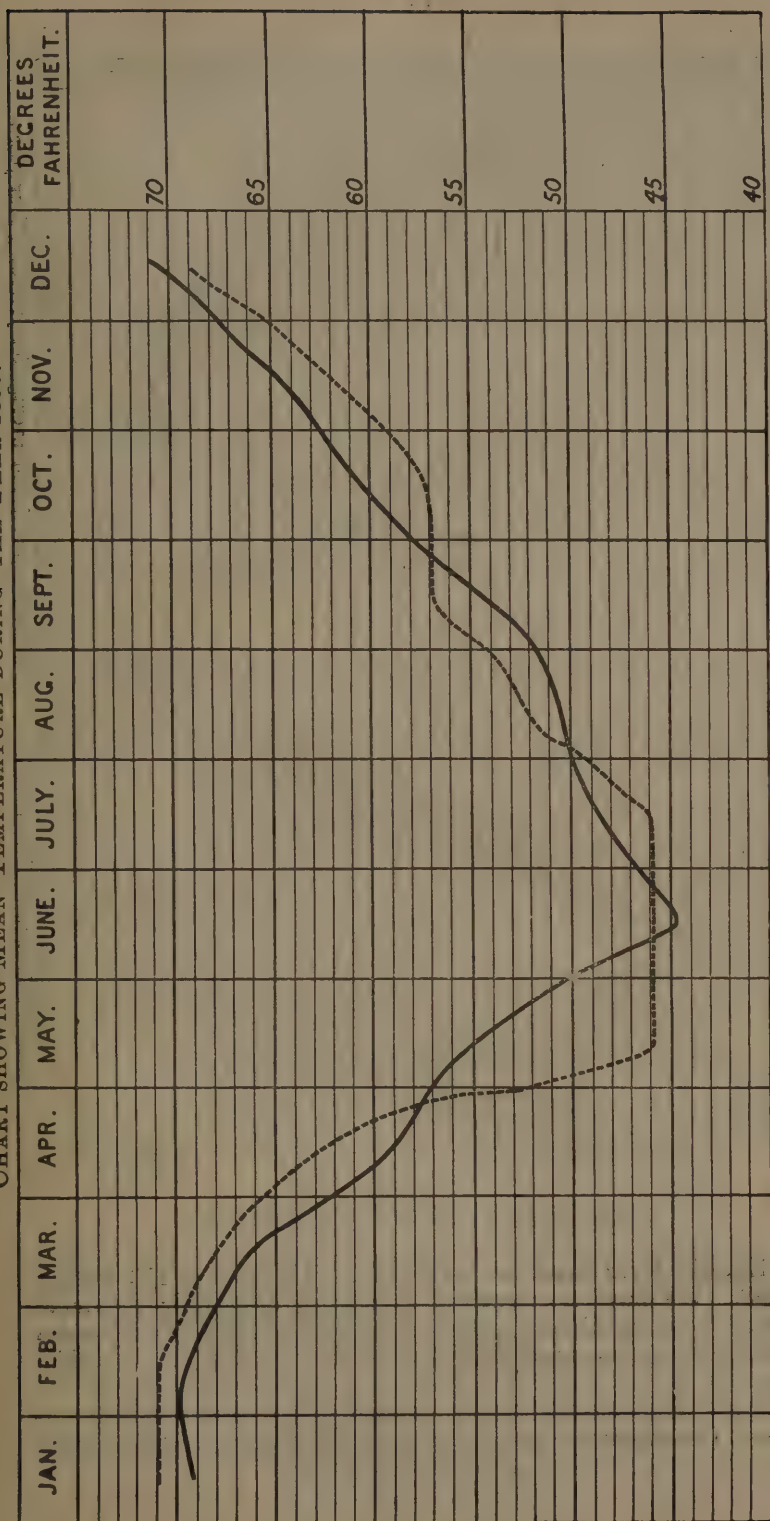
The mean temperature showed very little departure from the average.

As was pointed out on page 1 of this Report, the wet winter probably had an adverse effect on the population generally. Beyond this the weather had no appreciable effect in relation to sickness.

The appended charts give the monthly average mean temperature and rainfall, with a comparison with the average of previous years.

* The identification of the parasite rested on the fact that it was found in the blood both during the day and during the night.

CHART SHOWING MEAN TEMPERATURE DURING THE YEAR 1899.

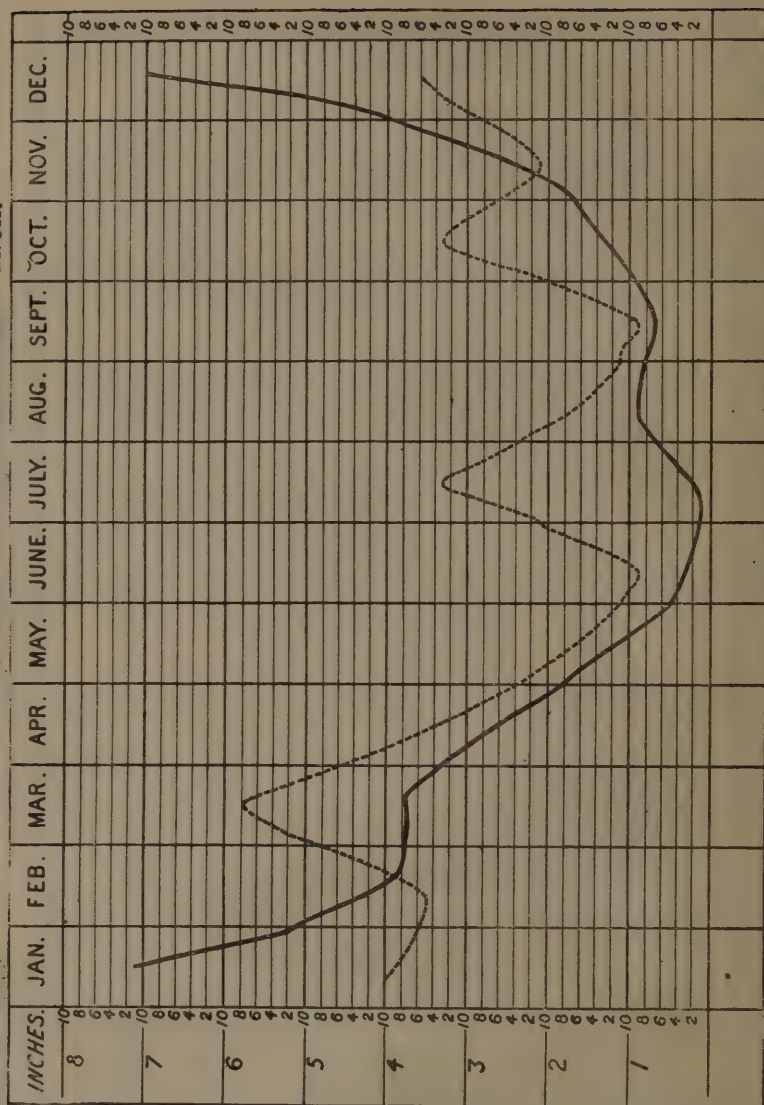


Dotted line = 1899. Plain line = average of preceding years.

BASUTO-
LAND,
1899.

BASUTO-
LAND,
1899.

CHART SHOWING RAINFALL TO TENTHS OF AN INCH.



Plain line = rainfall average for preceding four years.

Dotted line = rainfall in 1899.

REMARKS ON SPECIAL DISEASES.

Enteric fever cases are returned as 41, against 116 during 1898. We have no means of estimating accurately the mortality from the disease. There being no hospital accommodation for fever cases an opportunity of following up the subsequent history of enteric cases, first seen as out-patients, seldom occurs, but my impression is that in an ordinary year the mortality is low. Constipation is generally a marked feature, and the course

of the fever averages about three weeks. Complications are rare. The diet, as often as not, consists of "leteng" and coarse bread, made from Indian corn, and yet I have never come across a death due to perforation. In a considerable number of cases the disease aborts about the tenth day, the temperature falling rapidly.

In my Annual Report of 1898 I commented on several cases of epidemic dropsy which had occurred in the country. Cases were fairly numerous during 1898, and I saw two or three cases early in 1899, since when the disease appears to have died out. In one case—a child *æt.* three years—after the *œdema* had subsided several subcutaneous nodules were noticed in different parts of the trunk and extremities. Consent was obtained to excise one, and sections were made of it. It consisted of a soft centre surrounded by ordinary fibrous tissue. The soft centre, which was about the size of a pin's head, contained a tangled mass of what was taken to be filariæ. I did not, however, ever succeed in finding filariæ in the blood of any of the cases which came under my notice.

SANITARY AFFAIRS.

Sanitation is almost unknown, except at the different police camps, where the dry-earth system is in use in the houses of Europeans. What drainage exists is provided by nature. This, thanks to the fact that all native villages are built on high ground, and the periodical heavy rains, is fairly efficient.

With the exception of Teyateyaneng and Thlotse there is an excellent water supply at the different Magistracies.

VACCINATION STATISTICS.

10,593 vaccinations were performed during the year.

In districts where vaccination has been accepted by the native population the majority are efficiently vaccinated.

In the early part of last year 1,000 consecutive out-patients were examined, and 890 were found to have efficient vaccination scars, in numbers varying from one to ten, two being the most common.

RETURNS.

Most of the cases figuring in the Nosological Return were out-patients. At each station (Leribe, Maseru, Mafeteng, Mohale's Hoek) whence statistics embodied in this Report are obtained an average of only six beds are available for in-patient work, and they are almost entirely reserved for surgical cases.

During the year 207 patients were admitted; the majority were cases for operation.

**BASUTO-
LAND,
1899.**

There were 85 tumours removed, including: Ovarian (2), uterine (hysterectomy) (1), parotid (1), mammary (4), orbital (3), tubercular glands (7).

Four cases of chronic synovitis of the knee joint were treated successfully by arthrectomy.

16 cases of cataract were operated upon, and four patients suffering from glaucoma, a disease fairly common in this country, were treated; one by iridectomy, the others by ciliary neurotomy. (Division of all the nerves given off from the lenticular ganglion.)

Fractures and other local injuries and diseases of bones formed the bulk of the rest of the cases.

The total number of operations performed during the year was 1,238. This number includes all minor operations performed on out-patients.

The following returns accompany this Report:—

Meteorological Return, with an appendix thereto showing averages for the preceding four years, and a note on the climate.

Nosological Return.

EDW. C. LONG,
Principal Medical Officer.

Maseru,
15th March, 1900.

RETURN OF THE STATISTICS OF POPULATION FOR THE YEAR, 1899.

	Europeans and Whites.	Africans.	East Indians.	Chinese and Malays.	Mixed and Coloured.
Number of inhabitants in 1891...	578	218,324			
„ Births during the year 1					
„ Deaths „ „ 1					
„ Immigrants „ 1					
„ Emigrants,, „ 1					
Number of inhabitants in 1899...					
Increase or					
Decrease					

METEOROLOGICAL RETURN FOR THE YEAR 1899.

15

	Temperature.						Rainfall.		Winds.		Remarks.
	Solar Maximum.	Minimum on Grass.	Shade Maximum.	Shade Minimum.	Range.	Mean.	Amount in Inches.	Degree of Humidity.	General Direction.	Average Force.	
January	...		93	49	44	71	4.04	37	N.E.	2	* Beaufort scale. Rain fell on 90 days during the year. The remaining days being with few exceptions accompanied by bright sunshine.
February	...		94	48	46	71	3.46	40	N.E.	2	
March	...		84	45	39	69	5.84	70	N.E.	1	
April	...		81	36	45	63	3.71	65	W.	0	
May	...		69	21	48	45	1.60	62	W.	0	
June	...		68	24	44	46	.93	60	W.	0	
July	...		65	27	39	46	3.33	70	N.E.	3	
August	...		76	28	48	52	1.51	75	W.	5	
September	...		82	32	50	57	.94	41	W.	4	
October	...		85	30	55	57	3.31	51	W.	2	
November	...		88	35	53	62	1.89	65	N.E.	3	
December	...		96	41	55	69	3.61	50	N.E.	2	
							34.17				

**BASUTO-
LAND,
1899.**

BASUTO-
LAND,
1899.

APPENDIX TO METEOROLOGICAL REPORT.

NOTE ON THE CLIMATE OF BASUTOLAND.

Basutoland is an oblong tract of country situated between latitude $28^{\circ} 58' S.$, and latitude $31^{\circ} 3' S.$, having on its eastern border, which corresponds to the summit of the Drakensberg Mountains, Natal and Griqualand East, and on its western border the Caledon River and Orange Free State. It may be roughly divided into parts, the hill country formed by the Drakensberg and Maluti Mountains absorbing two-thirds of the total area, and extending from the north-east to the south-west. This part is mountainous and rugged, sparsely populated, and in many places covered with snow throughout the winter months. It has a lower mean temperature and a higher rainfall than the rest of the country, which consists of a narrow strip of comparatively level, but broken, ground, which slopes away from the base of the Maluti Mountains towards the plains of the Orange Free State.

The elevation of the mountain districts varies from 6,000 to 11,000 feet, the rest of the country being about 5,000 feet above sea level.

Owing to the hilly nature of the country the natural drainage is perfect. There is very little permanent standing water or swampy ground.

The prevailing wind is generally from the west in winter and from the north-east in summer. There is a comparative freedom from the high winds and their accompanying dust, which form the objectionable feature of most up-country districts.

The general purity of the air, coupled with the freedom from dust and an absence of the extreme dryness which characterises the air of the Karoo and the Orange Free State, tend to make the climate of Basutoland an ideal one for invalids.

As a health resort for phthisical patients it is unrivalled, and would prove highly beneficial to those who have suffered from malarial fever.

Pleasant, beneficial, and acceptable as the climate proves to those who spend the greater part of their time at lower altitudes, it offers certain drawbacks to Europeans who permanently reside in the country.

The excessive expenditure of nerve force necessary to the performance of work of any kind during a long period at a level of 5,000 feet has a prejudicial effect on the general nervous system, and makes a frequent change to lower altitudes a necessity.

The temperature is fairly equable throughout the year in the day time, but the winter nights are often characterised by extreme cold, as much as 10° F. of frost being of frequent occurrence; 18° F. in the screen and 20° on the grass were recorded in 1898.

BASUTO-
LAND,
1899.

The mean temperature for the whole year is 59° F. The average maximum in the summer is 85° F., but the nights are invariably cool, and, with the exception perhaps of a few days in the early summer before the rainy weather begins, the heat is not in any sense trying, being generally tempered by cool breezes from the mountains.

In winter the temperature is sufficiently high to admit of people sitting with comfort in the open air during a part of the day.

The average rainfall is 33 inches, most of which falls in the summer months.

Table "A" gives the average of four years' records—1894-1898—at eight stations, arranged in order, reckoning from north to south.

'Qacha's Nek is on the eastern border on the top of the Drakensberg, which accounts for its higher rainfall and lower mean temperature.

EDW. C. LONG,
Principal Medical Officer.

BASUTO-
LAND,
1899.

GOVERNMENT HOSPITALS AND DISPENSARIES.

RETURN of DISEASES and DEATHS in 1899 at the following
INSTITUTIONS : — LERIBE, MASERU, MAFETENG,
MOHALES HOEK.

Diseases.	Yearly Total		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES—			
Smallpox	134	39	
Measles	63	—	
Typhus	—	—	
Dengue	—	—	
Influenza	92	—	
Diphtheria	8	—	
Febricula	160	—	
Enteric Fever	41	—	
Cholera	—	—	
Dysentery	85	—	
Yellow Fever... ..	—	—	
Malarial Fever	1	—	
(a.) Intermittent	—	—	
(b.) Remittent	—	—	
(c.) Pernicious R.	—	—	
Erysipelas	5	—	
Pyæmia	1	1	
Septicæmia	3	1	
Tetanus	—	—	
Tubercle	83	1	

GOVERNMENT HOSPITALS AND DISPENSARIES.—*cont.*BASUTO-
LAND,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES— <i>cont.</i>			
Leprosy :			
(a.) Tubercular	1	—	
(b.) Anæsthetic	10	—	
Yaws	—	—	
Syphilis :			
(a.) Primary	9	—	
(b.) Secondary and Tertiary ...	1,044	—	
(c.) Inherited	293	—	
Gonorrhœa	267	—	
Hydrophobia	—	—	
Scurvy	7	—	
Alcoholism	—	—	
Delirium Tremens	—	—	
Rheumatism	416	—	
Rheumatic Fever	24	—	
Gout	27	—	
New Growth, non-malignant ...	145	—	
New Growth, malignant	32	—	
Anæmia	46	—	
Diabetes mellitus	1	—	
Diabetes insipidus	—	—	
Debility	122	—	

BASUTO
LAND,
1899.

(GOVERNMENT HOSPITALS AND DISPENSARIES.—*cont.*

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES—			
DISEASES OF THE NERVOUS SYSTEM—			
Sub-section 1.			
Diseases of the Nerves—			
Neuritis	28	—	
Meningitis	10	1	
Myelitis	—	—	
Hydrocephalus	—	—	
Encephalitis	—	—	
Abscess of brain	1	—	
Congestion of brain	—	—	
Sub-section 2—			
Functional Nervous Disorders—			
Apoplexy	1	—	
Paralysis	22	—	
Chorea	11	—	
Epilepsy	76	—	
Neuralgia	125	—	
Hysteria	79	—	
Sub-section 3—			
Mental Diseases—			
Idiocy	1	—	
Mania	3	—	
Melancholia	3	—	
Dementia	—	—	
Delusional insanity	—	—	
Diseases of the Eye	573	—	

GOVERNMENT HOSPITALS AND DISPENSARIES.—*cont.*BASUTO-
LAND,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES -cont.			
Diseases of the Ear	202	—	The total number of surgical operations performed during the year was 1,238
" " Nose	110	—	
" " Circulatory system.	128	1	
" " Respiratory system.	1,589	—	
" " Digestive system.	2,858	—	
" " Lymphatic system.	225	1	
" " Urinary system	104	—	
" " Generative system	87	—	
" " Male organs	—	—	
" " Female "	318	1	
" " Organs of Locomotion.	103	—	
" " Cellular Tissue	243	—	
" " Skin... ..	1,018	—	
Injuries, General	8	—	
" Local	382	—	
Surgical Operations	—	—	
Malformations	10	—	
Poisons	3	—	
Parasites... ..	170	—	
Grand total for year ...	11,611	46	

BERMUDA,
1899

No. 2.

BERMUDA.

THE REPORT OF THE MEDICAL OFFICER OF HEALTH FOR THE YEAR 1899.

The estimated civil population taken from the Registrar General's Annual Report which has just been published was, at the end of 1898, 16,291.

The births numbered 492 and the deaths 362. The living birth rate was 30·2 per 1,000 as compared with 32·8 per 1,000 in 1898; 31·7 per 1,000 in 1897; 31·4 per 1,000 in 1896, and 32·6 per 1,000 in 1895.

The death rate 20·6 per 1,000, as compared with 19·4 per 1,000 in 1898; 21 per 1,000 in 1897; 19·8 per 1,000 in 1896, and 21·7 per 1,000 in 1895.

The death rate during the period under review according to colour was 18·4 per 1,000 amongst the resident white and 21 per 1,000 amongst the coloured population.

The deaths, still-births included, arranged according to parishes were:—St George's 51, Hamilton 21, Smith's 18, Devonshire 23, Paget 31, Pembroke 111, Warwick 27, Southampton 26, Sandys 83.

The state of the public health has been eminently satisfactory during the year 1899, there having been, with the exception of a number of cases of mumps and enteric fever, no prevalence of any epidemic disease.

Cases of mumps, as in the whole of the previous year, occurred during the first quarter all over the country. No definite cause for this continued prevalence can be assigned.

Measles and whooping cough were both introduced by persons coming here from the United States, but neither of these diseases were allowed to spread.

Four cases of scarlet fever were reported during the year, but they were all isolated ones, and in no case did the disease spread, nor did a second case occur in the same house. I made frequent visits of inspection where these cases occurred, but the origin of the infection was difficult or impossible to discover.

Enteric fever caused nine deaths, and the notification of 67 cases. Seven cases of enteric fever occurred during the first quarter, three during the second quarter, 34 in the third quarter, and 23 in the fourth quarter. As in previous years, the greater number of cases occurred during the third quarter, coinciding with the onset of the hot weather, and mild in form. During the last ten years toads have increased enormously and spread all over the country, infesting every pool and pond. They are frequently found in tanks where drinking water is stored. It has been thought that these animals carry typhoid germs on their feet and backs from cesspools and other places into the drinking water. Reclaiming and filling in all the marsh lands may lessen the number of these pests and at the same time reduce the mosquitoes.

BERMUDA,

1899.

MOSQUITOES.

Under the direction of His Excellency the Governor I made and forwarded, through the Colonial Office in London, to the British Museum a collection of Bermuda mosquitoes and flies. I have since received a letter from the Director of the Natural History division of the British Museum, stating that the numerous collections received have not yet been thoroughly studied. But I was informed that the collection from Bermuda contained twenty-nine mosquitoes of the genus *Culex*, apparently referable to four species, but not yet specifically identified; horse flies of the genus *Tabanus* and a few non-biting diptera. The species of mosquito which has been proved to carry malaria is called *Anopheles*, and differs much from *Culex* in the adult, in the larva, and in habits. The mosquitoes found in Bermuda vary much in colour, from a light fawn colour to a dark greenish black; individuals vary in size too. They will bite in the day as well as night. The larva are to be found everywhere where water lodges, ponds, tanks, wells, &c. It would be difficult or impossible to get rid of them, for the reason that every dwelling-house has its tank for drinking water.

THE RAT AS A DISSEMINATOR OF PLAGUE.

In consequence of the large number of ships calling here from all parts of the world, I have been at some pains to bring under the notice of the Quarantine Health Officers, the Mayors of the city of Hamilton and the town of St. George's, and the various ship agents, the danger to the public health of the landing here of plague-infected rats, such mode of the transport of bubonic plague infection being now generally believed to be possible. Plague has been called a rat-borne disease, and it has been noticed that when rats are attacked with plague, they leave their habitations and migrate, therefore they would probably leave any ship they may be in for the shore, there to infect other rats and so start plague in the locality. Dr. Patrick Manson, C.M.G.,

BERMUDA, says:—"If ever a sanitary measure was indicated by common sense it is the destruction of rats in anticipation of threatened plague." I have also his authority for stating—"that if the rats in any given place were destroyed, although plague may be introduced, the chances of its spreading as an epidemic among the people would be enormously reduced." Professor W. J. Simpson in his lecture on this subject says:—"The precautions to be taken for the prevention of the spread of plague so far as rats are concerned consists in, (a) the destruction of as many rats as possible in a healthy country before there is any importation of plague, (b) the prevention of sick or dead rats being transported and imported by merchandise or grain into a country, and (c) in the event of importation of plague, the destruction and extermination with the earliest promptitude of rats, not only in the locality where the rats are dying, but also in the adjacent localities."

IMMIGRATION FROM THE WEST INDIES AND OTHER PLACES.

At the present time we are receiving a number of immigrants from the West Indies and Azores, and I apprehend that a number of diseases which at present are unknown or extremely uncommon here will be introduced. For example, two cases of anchylostomiasis have recently been brought under my notice in Pembroke parish. The care and management of these cases caused much anxiety and labour to the parish officials and expense to the ratepayers, every precaution being taken to prevent the spread of the disease. *Anchylostoma duodenale* is a bloodsucking parasite, which when it gains the inside of the human gut in the ova condition is hatched, and soon attaches itself by means of its buccal armature to the mucous membrane. It is supposed to shift its hold from time to time and thus obtain a plentiful supply of blood nourishment. When these blood-sucking parasites are present in the intestines of men in large numbers, more especially if its victims are poorly fed, the disease is very serious. I am indebted to Dr. Galgey's Report on *Anchylostoma duodenale* for most of the above information on this disease.

Again, *filaria nocturna*, including elephantiasis arabum, is common in the West Indies, and the Pembroke Parish Vestry have been put to the expense of assisting one of these cases to return to his home. Beri-beri and yaws, common in the West Indies, may be introduced here. Much may be said on leprosy and other diseases. The Army Medical Reports for a number of years have stated that Bermuda is an exceptionally healthy station as regards venereal diseases. I am prepared to prove that unrestricted immigration of West Indians here will seriously jeopardise our good reputation. The restrictions now provided

by law to keep out idiots and insane persons are not, in my opinion, sufficient. To say nothing of the remote effects of bringing in a lower class of coloured people to replace our own, by forcing the best to emigrate to the United States and the worst and weakest to a lower vitality by loss of employment and food, I come at once to conditions that West Indian immigration produces. They are more untidy in their habits, clothing, and condition than our people. They live or are willing to live crowded into any wooden house or hut unfit for human habitation. A large number of wood houses are being constructed for them in Pembroke and Sandys' Parishes. Clannishness and the utter disregard for comfort leads to a huddling together of a number of men in one room. This state of things would exist to an alarming and dangerous extent if it was not for the constant supervision of the Inspector of Nuisances.

BERMUDA,
1899.

The chief causes of death and the number of deaths from each disease or group of diseases are tabulated in Table II.

The important meteorological facts in each month are given in Table III. Both these tables are taken from the Registrar General's Report.

TABLE I.

Return of the Statistics of Population for the Year 1899.

—	White.	Coloured.	Total.
Estimated number of inhabitants in 1898	6,239	10,052	16,291
Estimated number of births during the year 1899.	150	342	492
Estimated number of deaths during the year 1899.	117	219	336
Estimated number of inhabitants in 1899	6,282	18,141	16,423
Estimated number increase	—	—	132

BERMUDA.
1899.

TABLE II.

Disease.	White.		Coloured.		Total
	Male.	Female.	Male.	Female.	
GENERAL DISEASES—					
Influenza	1	—	—	—	1
Cerebro-spinal Fever	—	—	1	—	1
Enteric Fever	1	4	2	2	9
Cholera (Infantile)... ..	—	—	—	1	1
Dysentery	1	3	1	1	6
Septicæmia	1	—	—	—	1
Puerperal Septicæmia	—	1	—	—	1
Tetanus	2	2	6	3	13
Tubercle	3	2	4	3	12
Tubercle of Lung	1	4	10	15	30
Leprosy	—	—	—	1	1
Secondary Syphilis... ..	—	—	—	1	1
Inherited Syphilis	—	—	—	1	1
Thrush	—	—	1	—	1
Alcoholism	—	—	1	—	1
Rheumatism	1	—	—	—	1
Cancer	3	4	1	4	12
Anæmia	2	1	2	4	9
Leucocythæmia	—	—	—	1	1
Diabetes Mellitus	—	—	1	—	1
Immaturity at Birth	2	2	5	3	12
Congenital Malformations	—	3	3	—	6
Debility	—	2	3	1	6
Old Age	4	10	3	5	22

Table II.—*continued.*BERMUDA,
1899.

Diseases.	White.		Coloured.		Total.
	Male.	Female.	Male.	Female.	
LOCAL DISEASES—					
NERVOUS SYSTEM—					
Sub-section 1—					
Meningitis	3	2	1	2	8
Sclerosis of Brain	—	—	1	—	1
Softening of Brain	3	—	1	1	5
Hæmorrhage of Brain	1	—	—	1	2
Apoplexy	—	1	—	1	2
Sub-section 2—					
Paralysis	1	4	4	3	12
Eclampsia (Infantile)	4	1	5	3	13
Epilepsy	—	—	1	—	1
Laryngismus Stridulus	—	—	—	1	1
Tetany	—	—	1	—	1
Sub-section 3—					
Idiocy	—	—	—	1	1
CIRCULATORY—					
Pericarditis	—	—	—	2	2
Valvular disease of Heart	1	—	1	1	3
Thrombosis	—	—	—	1	1
Heart Disease (not differentiated)	4	6	7	7	24
RESPIRATORY—					
Laryngitis	1	—	—	1	2
Bronchitis	—	3	—	3	6

BERMUDA,
1899.Table II.—*continued.*

Diseases.	White.		Coloured.		Total.
	Male.	Female.	Male.	Female.	
LOCAL DISEASES— <i>cont.</i>					
Respiratory— <i>cont.</i>					
Congestion of the Lungs	—	1	—	1	2
Pneumonia	1	1	4	—	6
Broncho-Pneumonia	—	—	1	—	1
Phthisis	4	—	1	5	10
DIGESTIVE—					
Stomatitis (parasitic)	—	—	—	1	1
Disorders of Dentition	—	—	2	2	4
Inflammation of the Stomach	—	1	—	—	1
Indigestion (Infantile)	1	—	1	—	2
Inflammation of Intestines	4	1	4	8	17
Atrophy of Intestines	1	—	—	—	1
Obstruction of Intestines	—	—	—	1	1
Hernia (umbilical)	—	—	—	1	1
Constipation (Infantile)	—	—	1	1	2
Diarrhoea	8	3	10	6	27
Inflammation of Liver	1	—	1	2	4
Peritonitis	1	1	—	—	2
Dropsy	1	—	1	—	2
URINARY—					
Acute Nephritis	—	—	—	1	1
Bright's Disease	1	3	4	5	13
Inflammation of the Bladder	—	—	2	—	2

Table II.—*continued.*BERMUDA,
1899.

Diseases.	White.		Coloured.		Total.
	Male.	Female.	Male.	Female.	
LOCAL DISEASES— <i>cont.</i>					
GENERATIVE—					
Stricture of Urethra	—	—	1	—	1
Affections connected with Parturition—					
Still Birth	6	6	17	10	39
Diseases of the Skin—					
Eczema	—	1	—	—	1
INJURIES—					
GENERAL—					
Multiple Injury	1	—	—	—	1
Suffocation from Submersion	2	1	1	3	7
Exhaustion (from what not differentiated).	—	—	—	1	1
Shock (from Submersion and Burns respectively).	1	1	—	—	2
LOCAL—					
Wounds (self-inflicted)	1	—	1	—	2
Concussion of the Brain	—	—	1	—	1
Total Causes specified	74	75	119	122	390
Causes not specified	2	1	4	4	11
General Total	76	76	123	126	401

BERMUDA,
1899.

TABLE

Meteorological Observations,

Observations taken Daily at 8.41 a.m, and 8.41 p.m.

Month.	Atmospheric pressure in inches.						Temperature of the Air.							Relative Humidity.		
	Mean corrected and reduced to 32° F. at mean sea level.	Highest.	Date.	Lowest.	Date.	Range.	Mean.	Highest.	Date.	Lowest.	Date.	Daily Range.		Mean.	Lowest.	Date.
												Mean.	Greatest.			
January..	30'229	30'634	3	29'792	20	'692	63'8	72'9	9	50'6	3	9'8	14'7	80'9	54'2	11
February	30'156	30'543	15	29'775	13	'768	64'2	75'1	22	52'4	3	8'8	15'9	78'0	58'9	14
March ..	30'148	30'418	12	29'774	24	'644	64'4	75'3	5	53'2	31	10'9	19'3	74'1	48'8	21
April ..	30'056	30'308	25	29'617	5	'691	63'6	75'3	1	50'4	13	10'3	18'9	75'8	53'2	7
May ..	30'083	30'363	29	29'756	3	'607	67'0	80'2	31	55'6	6	9'8	19'0	81'0	58'5	11
June ..	30'174	30'285	2	30'005	20	'283	75'5	84'0	28	66'2	1	10'6	14'8	86'6	67'9	24
July ..	30'191	30'313	7	29'934	30	'379	79'5	87'4	26	69'4	2	11'0	14'8	82'4	68'4	27
August ..	30'032	30'145	18	29'865	4	'280	79'3	90'4	5	66'6	10	10'5	16'2	82'2	67'2	3
September	30'078	30'254	19	29'376	12	'878	76'6	85'0	2	67'2	19	10'5	13'6	82'9	59'1	17
October ..	30'109	30'243	4	29'962	20	'281	73'8	83'2	7	65'4	23	7'2	11'6	78'8	58'9	26
November	30'043	30'399	8	29'656	24	'743	67'6	80'0	2	56'6	26	8'2	15'6	74'7	53'4	21
December	30'081	30'451	18	29'623	29	'828	63'6	73'2	4	47'8	11	8'2	17'6	74'7	57'2	11

Mean Atmospheric Pressure for the year 30'115 inches.
 Mean Temperature of the air for the year 69'9 degrees.
 Mean Relative Humidity for the year 79'3 per cent.
 Mean Hourly Velocity of Wind for the year 8'5 miles.

III.

BERMUDA,
1899.*Bermuda, 1899.*

Observatory, Prospect Hill,

Latitude 32° 17' 40" North ;

Longitude 64° 47' 00" West.

Elevation 151 feet above sea level.

		Mean amount of Cloud.	No. of days-completely clouded.	Direction of Wind. Number of Observations from									Velocity of Wind.			Precipitation.				No. of Thunderstorms.	No. of Gales.	Month.
				North.	North East.	East.	South East.	South.	South West.	West.	North West.	Calm.	Mean miles per hour.	Highest days velocity per hour.	Direction and Data.	Amount.	No. of days on which rain fell.	Highest amount in any day.	Date.			
'6	3	7	8	2	4	3	20	0	6	12	8'9	17'5	N.E. 3	5'90	24	1'22	19	0	0	January.		
'6	2	5	6	0	2	3	21	5	8	6	10'6	26'2	W. 14	3'29	13	1'01	28	0	1	February.		
'5	2	8	9	0	8	4	18	4	6	5	9'8	18'5	W. 20	2'66	13	'85	7	0	0	March.		
'6	4	6	10	5	3	2	12	2	13	7	10'8	23'5	N. 6	5'93	18	1'52	10	2	1	April.		
'5	6	6	14	4	6	0	12	0	3	17	7'9	16'4	N. 10	4'16	19	1'16	9	1	0	May.		
'5	0	0	5	1	5	6	15	3	8	17	6'0	12'3	S.W. 21	4'91	15	2'15	18	0	0	June.		
'4	1	0	0	2	5	3	20	3	5	24	5'8	13'5	S.W. 12	5'58	13	2'68	4	2	0	July.		
'5	2	1	7	1	1	1	17	4	7	23	5'8	13'8	S.W. 7	5'64	15	1'14	8	4	0	August.		
'7	3	0	5	3	8	6	17	2	4	15	7'6	29'3	S.W. 13	8'02	14	2'60	15	2	2	September.		
'6	1	0	26	5	18	2	5	0	0	6	10'1	21'3	N.E. 22	1'98	10	'66	19	0	0	October.		
'6	4	7	13	1	3	3	6	5	2	20	7'8	14'9	N.E. 24	5'17	20	1'36	5	2	0	November.		
'7	0	4	16	7	1	0	7	6	6	15	10'4	28'6	N.E. 22	4'67	19	1'49	2	1	2	December.		

Total amount of rainfall for the year 57'91 inches
 Difference of rainfall from average of the past nine years 3'27 inches less.
 Rain fell on 191 days during the year.

E. J. HARRIS,

Sergeant, Royal Army Medical Corps.

BRITISH
GUIANA,
1899.

No. 3.

BRITISH GUIANA.

MEDICAL REPORT FOR 1899.

Estimated population for the year 1899, 287,288 ; Births, 8,275 ; Deaths, 8,352. Birth rate per 1,000, 29 ; Death rate per 1,000, 29. Comparison with previous year—Birth rate 30 ; Death rate, 34 per 1,000.

The relative mortality in the different quarters : March, 2,632 ; June, 2,093 ; September, 1,828 ; and December, 1,799.

1,929 Vaccinations were performed during the year. The Colony was again free from smallpox, although it was prevalent in some of the neighbouring countries, against which strict quarantine measures were enforced.

The principal diseases occurring during the year were :—Malarial Fevers, Diarrhœa, Phthisis, Dysentery, Pneumonia, Bright's Disease and Heart Disease.

Of the above diseases, Diarrhœa, Dysentery, and Phthisis shewed higher totals than last year, but none of them appeared in an epidemic form.

" Fevers " although responsible for the largest number of deaths, shewed a reduction on last year.

The greatest number occurred in the first quarter of the year, and the smallest in the third.

A few isolated cases of Hæmo-Globunuric Fever appeared in the first and third quarters. There were also a few cases of " Typhoid Fever " and they also appeared in places not contiguous to each other.

" Diarrhœa " shewed a large increase on last year. The deaths for the first quarter were abnormally high, being nearly twice as much as the total for each of the other quarters. The last quarter shewed the smallest number.

A few cases of "Choleraic Diarrhœa" ended fatally. They occurred in equal numbers in the first, second, and fourth quarters, but none in the third, and also in or near the same districts.

"Phthisis" shewed a very small increase on last year. The greatest number occurred in the first and last quarters; the second and third quarters being about the same.

"Dysentery" is one of the few diseases which shewed an excess over last year. It appeared in equal numbers in the last two quarters, which shewed the smallest numbers; the first and second quarters shewing very much higher totals.

"Pneumonia" was about the same in each of the quarters.

"Bright's Disease" was highest in the second and first quarters and lowest in the third.

"Heart Disease" was about the same in each of the quarters; the last shewing the fewest deaths.

This year as compared with last year was much healthier, each quarter, with the exception of the second, shewing less deaths than in the previous year. The first quarter of the year shewed the highest number of deaths, but is lower than the total for the corresponding quarter last year. There has been no case of Yellow Fever since the Autumn of the year 1888.

The general sanitary condition of the Colony is fairly satisfactory.

The water supply of the Town is good; on the Sugar Estates it is gradually improving, but in the villages it is anything but satisfactory, especially in the dry weather.

Drainage on the whole is good, but in the wet weather most of the villages are inundated, the result of defective drainage.

In some parts of Georgetown, there is still a considerable amount of overcrowding in improperly ventilated rooms.

RETURN of the STATISTICS of POPULATION for the YEAR 1899.

—				Europeans and Whites.	Africans.	East Indians.	Chinese and Malays.	Mixed and Coloured.	Aboriginals.
Number of Inhabitants in 1898	...	...	...	15,916	2,391	114,485	2,980	143,635	6,815
" Births during the year 1899	...	...	...	395	—	2,900	91	4,618	271
" Deaths " " 1899	...	...	...	491	125	2,868	113	4,448	307
" Immigrants " " 1899	...	...	...	—	—	2,532	12	—	—
" Emigrants " " 1899	...	...	...	—	—	1,379	22	—	—
" Inhabitants in 1899	...	...	...	15,820	2,266	115,670	2,948	143,805	6,779
Increase	—	—	1,185	—	170	—
Decrease	96	125	—	32	—	36

METEOROLOGICAL RETURN for the YEAR 1899.

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BRITISH
GUIANA,
1899.

	Temperature.						Rainfall.		Winds.		Remarks.
	Solar Maximum.	Minimum on Grass.	Shade Maximum.	Shade Minimum.	Range.	Mean.	Amount in Inches.	Degree of Humidity.	General Direction.	Average Force.	
January ...	152	67	84	73	11	78	12.60	9	N.E.	.6	
February ...	151	63	84	72	12	78	3.21	9	N.E.	.6	
March ...	152	64	85	72	13	78	4.05	7	N.E.	.6	
April ...	156	60	87	74	13	80	1.24	8	N.E.	.5	
May ...	153	53	87	74	13	80	2.13	11	N.E.	.6	
June ...	149	62	87	74	13	80	7.30	9	N.E.	.5	
July ...	150	62	87	74	13	80	15.48	9	N.E.	.5	
August ...	152	59	89	75	14	82	1.96	12	N.E.	.5	
September...	153	55	89	75	14	82	2.36	11	N.E.	.7	
October ...	156	44	89	74	15	81	.75	10	E.	.8	
November ...	151	41	88	75	13	81	.27	9	E.	.6	
December ...	152	48	87	75	12	81	1.35	9	E.	.7	
Total ...	1,827	678	1,043	887	156	961	52.70	113	—	—	
Monthly Average ...	152.25	56.5	86.9	73.9	13.0	80.0	4.39	9.4	—	—	

BRITISH
GUIANA,
1899.

RETURN of DISEASES and DEATHS in 1899, at the following
INSTITUTIONS:—GEORGETOWN HOSPITAL, BERBICE
HOSPITAL, SUDDIE HOSPITAL, BARTICA HOSPITAL,
MORAWHANNA HOSPITAL, &c.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES—			
Small-pox	—	—	
Measles	4	—	
Typhus	—	—	
Dengue	—	—	
Influenza	4	—	
Diphtheria	1	—	
Febricula	7	—	
Enteric Fever	3	1	
Cholera	—	—	
Dysentery	425	169	
Yellow Fever	—	—	
Malarial Fever	379	21	
(a.) Intermittent... ..	1,813	28	
(b.) Remittent	157	12	
(c.) Pernicious R.	5	3	
Cachexia	20	5	
Erysipelas	19	3	
Pyæmia	3	2	
Septicæmia	80	59	
Tetanus	32	17	
Tubercle	594	250	
Tubercular Glands	3	—	
Carried forward	3,549	570	

*Georgetown Hospital, &c.—cont.*BRITISH
GUIANA,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
Brought forward ...	3,549	570	
GENERAL DISEASES— <i>cont.</i>			
Leprosy—			
(a.) Tubercular ...	15	1	
(b.) Anæsthetic ...	45	3	
Yaws ...	24	—	
Syphilis ...	115	13	
(a.) Primary ...	2	—	
(b.) Secondary ...	31	1	
(c.) Tertiary ...	167	5	
(d.) Inherited ...	9	3	
Gonorrhœa ...	242	—	
Venereal Granuloma ...	4	—	
Scurvy ...	4	—	
Alcoholism ...	16	—	
Delirium Tremens ...	1	—	
Rheumatism ...	745	—	
Rheumatic Fever ...	1	1	
New Growth, non-malignant ...	45	1	
„ malignant ...	67	21	
Anæmia ...	203	5	
Diabetes mellitus ...	4	—	
Marasmus ...	48	39	
Diabetes insipidus ...	1	—	
Starvation ...	2	—	
Debility ...	246	5	
	5,586	668	

BRITISH
GUIANA,
1899.

Georgetown Hospital, &c.—cont.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES—			
DISEASES OF THE NERVOUS SYSTEM—			
Sub-section 1—			
Diseases of the Nerves—			
Meningitis	20	14	
Encephalitis	1	1	
Abscess of Brain	3	3	
Congestion of Brain... ..	5	1	
Cerebral Tumour	1	—	
Sub-section 2—			
Functional Nervous Disorders—			
Apoplexy	42	9	
Paralysis	25	—	
Chorea	1	—	
Epilepsy	70	4	
Neuralgia	51	—	
Hysteria	19	—	
Sclerosis of Spinal Cord ...	3	—	
Potts Disease... ..	1	—	
Sub-section 3—			
Mental Diseases—			
Idiocy	1	—	
Mania	125	2	
Melancholia	18	1	
Dementia	16	1	
Delusional Insanity	25	—	
Carried forward	427	36	

*Georgetown Hospital, &c.—cont.*BRITISH
GUIANA,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
Brought forward	427	36	
LOCAL DISEASES—<i>cont.</i>			
Diseases of the Eye	342	—	
" " Ear	38	—	
" " Nose	13	—	
" " Circulatory System	270	62	
" " Respiratory System	1,246	175	
" " Digestive System ...	2,463	137	
" " Lymphatic System	191	—	
" " Urinary System ...	683	211	
" " Generative System—			
Male Organs ...	527	8	
Female Organs ..	312	7	
" " Organs of Locomotion	278	—	
" " Cellular Tissue ...	956	10	
" " Skin	560	—	
	8,306	646	
Injuries, General	10	—	
" Local	650	11	
Surgical Operations	961	10	
Malformations	2	—	
Poisons	16	4	
Parasites... ..	317	2	
Anchylostomiasis	135	13	
	2,091	40	

BRITISH
HONDURAS.
1899.

No. 4.

BRITISH HONDURAS.

REPORT FOR THE YEAR 1899 BY THE COLONIAL
SURGEON.

(Extract.)

PUBLIC HEALTH.

In the sense that no rapidly fatal epidemic disease has prevailed, the public health of the Colony for 1899 may be described as good. But this is not the sanitarian's stand-point of judging such a matter. So long as there are what Sir John Simon terms "persistent local redundancies of preventable disease," it is not possible to speak of the public health as good from the sanitarian's point of view. And the appended tables of mortality shew that there are such persistent local redundancies of preventable disease; and these diseases are such as are usually associated with a damp and polluted soil.

In the matter of diseases prevalent in the Colony there is but little to add. Whooping-cough, which invaded the Colony in October, 1898, has continued to prevail and has contributed largely to the mortality of infants, and raised the death rate from respiratory diseases. One case of Enteric fever was reported during the year in Belize; the diagnosis was confirmed *post mortem*. This disease has been occasionally reported in previous years from Orange Walk and Corosal, but so far as I know this is the first occasion on which the disease has been formally reported in Belize. From time to time, though relatively rarely, the disease has been reported in Central America; Saillant reported eight cases of typhoid fever as being treated in the Marine Hospital of Vera Cruz in 1864 and 1865, and "Liddel of Panama, and Schwalbe of Costa Rica, agree in the opinion that typhoid is no stranger to the littoral of Central America,"* and further we, in Belize, have had a case in the hospital from Livingstone, Guatemala. It is barely possible that the disease will assume any proportions in Belize as the water supply is on the "separate" system, that is to a considerable extent each house has its supply from a separate vat, the water being rain water collected from the roof.

* Hirsch: Historico-Geographical Pathology, Vol. I. p. 638.

Ancylostoma was reported for the first time in this Colony in 1898. During last year it was frequently observed. In Corosal "it was observed in selected cases this worm was almost invariably present associated with *Ascaris lumbricoides* and *Oxyuris vermicularis*;" and in Orange Walk the Medical Officer reports that it is frequently encountered, and is responsible for much of the Anæmia prevalent among the Indian population.

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Three cases of Hæmoglobinuric fever (the so-called Black Water fever) occurred during the year in Orange Walk.

Legislation.—During the year ordinances were passed including plague in the category of quarantinable diseases; and the provisions of the Public Health Ordinance, 1894, making it compulsory to provide all houses with accommodation for water storage were repealed.

Quarantine.—During the year all vessels from South American ports were dealt with as infected.

Vaccination.—The number of vaccinations performed by official vaccinators during the year was as follows :—

—			Number.
Belize District ...	...	...	327
Corosal District	...	...	164
Orange Walk District	...	...	134
Punta Gorda District ...	...	...	70
Stann Creek District...	...	...	49
Total ...			744

C. H. EYLES,

Colonial Surgeon.

APPENDIX.

METEOROLOGICAL SUMMARY for 1899.

Period.	Barometer.		Shade Temperature.		Relative Humidity.		Solar Radiation in Vacuo.		Rain.	
	Highest.	Lowest.	Maximum.	Minimum.	Highest.	Lowest.	Highest.	Lowest.	No. of Days.	Inches.
January	30.236	29.801	85.6	56.0	100	81	145.6	97.0	17	7.05
February	30.359	29.795	85.8	57.6	100	79	—	—	8	1.99
March	30.447	29.765	88.9	57.5	100	87	—	—	3	2.37
April	30.217	29.174	87.9	63.5	100	85	—	—	4	2.18
May	30.191	29.008	87.8	74.0	100	92	—	109.5	7	2.36
June	30.046	29.755	87.7	70.5	100	82	152.5	87.0	17	8.89
July	30.038	29.907	88.0	69.8	100	78	159.9	122.0	15	4.64
August	30.014	29.835	89.8	69.5	100	75	152.0	107.2	14	7.95
September	30.047	29.779	90.2	69.2	100	72	158.2	125.2	18	7.20
October	30.004	29.755	89.8	62.5	100	69	161.8	120.0	17	18.74
November	30.106	29.666	87.0	60.2	100	73	156.5	111.2	17	12.59
December	30.203	29.883	83.8	56.0	100	76	147.8	88.8	15	4.51
For the Year	30.447	29.008	90.2	56.0	100	69	146.0	87.0	152	80.47

DEATH RATE per 1,000 during the SEVERAL MONTHS of the YEAR from 1893 to 1899.

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Annual.
1893	68.800	34.969	41.386	48.769	43.565	29.262	42.839	47.559	40.516	31.222	41.641	38.846	40.953
1894	53.376	40.046	39.763	43.304	36.898	37.382	29.733	35.201	35.900	38.817	17.395	36.887	36.718
1895	24.025	36.762	30.026	28.613	31.792	23.666	31.086	31.800	33.558	28.260	34.678	33.558	31.122
1896	29.271	17.880	23.347	25.926	17.074	34.208	26.831	25.438	25.556	34.149	30.247	52.966	28.893
1897	31.966	28.922	25.092	27.349	24.748	29.125	31.439	24.749	19.536	40.216	34.459	37.466	29.524
1898	45.669	22.098	32.814	28.416	23.003	24.130	32.137	32.475	46.842	34.505	27.063	43.301	32.905
1899	32.443	34.437	37.795	39.055	28.095	31.796	33.443	34.450	35.598	29.098	30.760	39.801	33.801

MORTALITY and BIRTH RATES during 1899.

Principal causes of Mortality.		Districts.						The Colony.
		Belize.	Corosal.	Orange Walk.	Stann Creek.	Toledo.	Cayo.	
Malarial fevers	...	2.746	18.395	19.375	2.955	13.489	14.610	9.538
Dysentery	...	0.915	4.876	4.153	1.375	0.686	1.948	2.016
Phthisis	...	1.983	0.443	0.791	1.963	1.114	0.974	1.590
Nervous diseases	...	5.874	5.541	2.560	1.178	1.829	0.649	3.719
Circulatory diseases	...	0.534	0.665	0.395	0.196	1.114	—	0.455
Respiratory diseases	...	4.148	7.092	7.315	3.338	3.429	0.974	4.854
Intestinal diseases	...	3.413	2.211	0.989	1.178	2.515	1.623	2.583
Rate of deaths	...	29.750	53.413	42.111	21.598	33.379	29.545	33.810
Rate of births	...	43.329	56.516	42.902	29.844	44.953	43.181	43.320
Estimated mean annual Population	...	13,109	4,512	5,058	5,093	4,374	3,080	35,226

MORTALITY from PRINCIPAL CAUSES of DEATH from 1891 to 1899 for the WHOLE COLONY.

Year.	Small Pox.	Yellow Fever.	Measles.	Malarial Fever.	Dysentery.	Phtbisis Pulmonary.	Nervous Diseases.	Circulatory Diseases.	Respiratory Diseases.	Intestinal Diseases.	Total Death Rates.
1891
1891
1892
1892
1893
1893
1894
1894
1895
1895
1896
1896
1897
1897
1898
1898
1899
1899

BELIZE DISTRICT.

Year.	Small Pox.	Yellow Fever.	Measles.	Malarial Fever.	Dysentery.	Phtbisis, Pulmonary.	Nervous Diseases	Circulatory Diseases.	Respiratory Diseases.	Intestinal Diseases.	Total Death Rates.
1891	0.088	0.526	—	4.206	1.928	1.314	3.943	1.402	2.577	3.330	29.791
1892	—	—	—	4.032	0.600	1.887	4.461	1.115	1.460	1.887	30.884
1893	—	—	—	3.779	2.015	0.924	4.192	1.596	1.596	2.687	32.333
1894	—	—	0.749	3.246	1.665	1.665	2.997	1.498	2.247	1.332	22.134
1895	—	—	—	4.580	1.063	2.617	3.517	1.227	1.390	2.372	26.581
1896	—	—	—	3.939	1.769	1.286	3.617	0.643	2.114	2.331	28.618
1897	—	—	—	4.266	1.896	1.027	5.452	1.185	1.975	1.975	27.569
1898	—	—	—	2.912	1.100	2.408	5.515	0.855	1.864	2.563	27.495
1899	—	—	—	2.746	0.915	1.983	5.874	0.534	4.148	3.413	29.750

COROSAL DISTRICT.

Year.	Small Pox.	Yellow Fever.	Measles.	Malarial Fever.	Dysentery.	Pneumonia, Pulmonary.	Nervous Diseases.	Circulatory Diseases.	Respiratory Diseases.	Intestinal Diseases.	Total Death Rate.
1891	...	...	...	...	...	...	...	...	...	...	...
1891	0.181	0.362	—	21.369	2.535	0.905	4.527	1.86	2.716	0.724	44.005
1892	—	0.551	—	22.055	3.492	0.919	5.698	1.103	3.124	1.286	49.991
1893	—	—	—	31.837	3.537	0.186	6.516	0.372	2.420	2.606	61.253
1894	—	—	4.213	22.214	2.680	0.574	3.639	0.383	3.639	2.872	55.346
1895	—	—	—	7.852	7.852	1.767	7.067	0.785	2.356	1.767	40.927
1896	—	—	—	16.016	4.832	1.007	7.046	0.201	1.007	3.221	42.480
1897	—	—	—	17.345	4.543	1.032	4.336	1.652	1.239	2.065	42.123
1898	—	—	—	16.863	4.269	1.708	3.842	0.214	5.336	0.854	45.678
1899	—	—	—	18.395	4.876	0.443	5.541	0.665	7.092	2.211	53.413

ORANGE WALK DISTRICT.

Year.	Small Pox.	Yellow Fever.	Measles.	Malarial Fever.	Dysentery.	Phtisis, Pulmonary.	Nervous Diseases.	Circulatory Diseases.	Respiratory Diseases.	Intestinal Diseases.	Total Death Rate.
1891	14-822	...	...	...	...	...	...	62-537
1892	3-901	...	...	...	...	...	...	42-532
1893	48-850
1894	3-007	21-251	1-604	1-203	1-403	—	0-802	0-802	36-287
1895	11-393	2-199	—	0-799	0-399	0-399	2-399	23-586
1896	15-186	1-599	0-997	3-198	—	0-399	2-193	33-493
1897	12-525	1-789	2-187	3-777	1-193	0-398	1-421	28-231
1898	24-782	2-181	1-388	3-569	0-595	1-983	0-396	45-203
1899	19-375	4-153	0-791	2-560	0-395	7-315	0-989	42-111

STANN CREEK DISTRICT.

Year.	Small Pox.	Yellow Fever.	Measles.	Malarial Fever.	Dysentery.	Phtisis, Pulmonary.	Nervous Diseases.	Circulatory Diseases.	Respiratory Diseases.	Intestinal Diseases.	Total Death Rate.
1891	8.461	1.322	0.793	1.851	0.529	0.793	—	21.153
1892	6.624	1.274	1.274	1.274	0.509	2.801	0.255	25.986
1893	11.294	4.273	1.228	0.982	—	0.982	0.491	32.899
1894	0.473	4.994	4.257	0.946	1.656	0.946	0.946	0.709	23.652
1895	2.507	2.051	1.368	2.051	0.228	1.595	0.456	18.460
1896	2.196	0.659	0.439	1.098	0.659	0.659	1.098	14.819
1897	5.299	1.060	1.060	2.544	2.119	0.848	0.424	18.864
1898	5.110	0.815	0.815	1.835	0.204	0.815	0.408	18.348
1899	2.955	1.375	1.963	1.178	0.196	3.338	1.178	21.598

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TOLEDO DISTRICT.

Year.	Small Pox.	Yellow Fever.	Measles.	Malarial Fever.	Dysentery.	Phtisis, Pulmonary.	Nervous Diseases.	Circulatory Diseases.	Respiratory Diseases.	Intestinal Diseases.	Total Death Rate.
1891	18-740	4-915	0-307	3-072	0-307	1-529	0-307	35-350
1892	30-787	1-480	0-296	1-184	0-592	2-072	1-184	45-293
1893	39-075	—	1-426	0-570	—	—	0-570	46-776
1894	0-275	31-671	6-985	1-516	0-826	0-275	0-826	0-826	52-224
1895	34-420	1-062	—	0-265	0-265	1-572	0-265	51-487
1896	15-853	0-643	—	1-931	—	0-643	1-287	25-825
1897	18-011	0-494	0-987	4-540	—	0-740	0-740	29-855
1898	15-191	1-187	0-475	1-662	0-238	5-697	0-949	33-705
1899	13-489	0-686	1-114	1-829	1-114	3-429	2-515	33-379

THE CAYO DISTRICT.

Year.	Small Pox.	Yellow Fever.	Measles.	Malarial Fever.	Dysentery.	Phtthisis, Pulmonary.	Nervous Diseases.	Circulatory Diseases.	Respiratory Diseases.	Intestinal Diseases.	Total Death Rate.
1891	17,523	1,491	0.373	2.610	0.373	2.610	0.746	35.420
1892	16,411	1,823	0.365	1.094	0.365	5.835	1.459	42.670
1893	11,769	1,784	0.357	1.070	0.900	1.784	1.070	28.461
1894	4,959	14,169	1,063	1.417	1.063	1.063	3.188	0.708	36.131
1895	17,403	1,392	0.348	2.436	0.348	1.044	0.696	35.503
1896	13,853	0.348	0.348	1.042	0.348	0.696	0.696	25.409
1897	16,812	2,354	0.672	0.673	1.009	1.681	1.009	35.979
1898	18,843	0.661	0.661	0.992	—	1.983	0.992	39.008
1899	14,610	1,948	0.974	0.649	—	0.974	1.623	29.545

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DEATH RATE during the FIRST FIVE QUINQUENNIAL
PERIODS of LIFE.

Year.	Total Death-rate.	Age Groups.				
		0 to 5.	6 to 10.	11 to 15.	16 to 20.	21 to 25.
1891	37·462	78·194	17·306	8·140	20·938	25·878
1892	38·297	96·794	19·266	13·898	14·056	20·664
1893	40·953	97·719	19·245	11·882	14·431	23·381
1894	36·718	79·653	14·985	13·223	14·794	21·586
1895	31·122	68·410	14·513	11·265	14·042	20·757
1896	28·893	62·112	8·774	11·112	10·864	17·591
1897	29·524	66·930	10·705	6·922	12·056	22·619
1898	32·905	82·034	9·661	7·682	12·685	18·800
1899	33·810	90·028	11·524	8·139	14·338	16·884

REPORT ON THE PUBLIC HOSPITAL, BELIZE,
FOR THE YEAR 1899.

(Extract).

Typhoid Fever.—One case of Enteric fever was admitted, a Norwegian gentleman from Livingstone; he was in Hospital for 57 days, having had two relapses, but ultimately made a good recovery.

Respiratory Diseases.—The mortality still keeps high; the cases of phthisis within this Colony are both acute and fatal.

Beri-Beri.—Two cases occurred during the year. There cannot be any doubt as to the diagnosis, as they were fairly typical cases. One a Spanish Indian inmate of the Lunatic Asylum who was chiefly employed in the Asylum Garden. He was immediately removed, and the whole Asylum thoroughly fumigated and disinfected. The other was a Swedish sailor who took ill on the voyage from one of the Southern ports to this place. He made a good recovery, but in the first case mentioned it proved fatal.

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1899.

MEDICAL REPORT ON THE COROSAL DISTRICT FOR THE YEAR 1899.

(Extract.)

INFECTIOUS DISEASES.

Throughout the whole year a mild form of Whooping Cough has been prevalent. Though the mortality was comparatively slight, fifteen deaths were registered from this disease during the year, chiefly confined to its latter half, as the following table will shew.

Deaths from Whooping Cough :—

January	...	...	1	July	...	...	3
February	...	...	—	August	...	...	2
March	...	...	—	September	...	...	1
April	...	...	—	October	...	...	2
May	...	...	1	November	...	...	3
June	...	...	—	December	...	...	2

In the month of December a very mild epidemic of influenza was prevalent, but no deaths were registered from this disease.

PREVALENT DISEASES.

Dysentery.—Twenty-one deaths were registered from this disease, as against 20 in the previous year, 20 in 1897, and 23 in 1896. As usual it was most prevalent during the rainy season, 9 out of the 21 deaths taking place during the months of August, September, and October. As noticed in former years, the disease when it occurred in the dry season was of a far more malignant type than during the rainy season.

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The deaths were distributed as follows :—

January	1	July	—
February	1	August	6
March	...	...	2	September	...	...	2
April	...	...	2	October	...	...	1
May	...	...	1	November	...	...	2
June	...	...	2	December	...	...	1

Several cases of *Anchylostoma Duodenale* were treated ; it was observed that in selected cases this worm was almost invariably present, often associated with *Ascaris Lumbricoides*, and *Oxyurus Veluncularis*.

Tuberculosis has within the last two years become far more prevalent in the District. There were 9 deaths during the year from it, and 10 in 1898, as against 4 in 1897, and 4 in 1896.

Leprosy.—One death occurred from this disease during the year. The patient was not an inmate of the leper hut.

Vital Statistics.—The total number of births registered during the year was 255, as against 216 in the previous year. The total number of deaths was 241 as against 214 in the year 1898. The death rate is considerably higher than that of the previous year, being the highest recorded since 1894, as the following table shews :—

Year.	Death Rate.
1893.	61·253
1894	55·346
1895.	40·927
1896.	42·480
1897.	42·123
1898.	44·187
1899.	49·762

The infantile mortality is even worse than last year. The number of deaths registered of children under 5 years of age was 103, as against 86 in 1898 ; forming no less than 42·74 of the entire death rate, as against 40·01 per cent. in the previous year. The number of deaths registered of children under 1 year was 54, or 22·40 per cent. of the entire death rate. In fact the large increase in the death rate, over that of last year, is entirely

due to the increased infantile mortality. I have over and over again pointed out that this wholesale slaughter of children, which appears to be getting worse year by year, might easily be remedied by compelling labourers to make some provision for their wives, or concubines, and their families, when they obtain their advances at Christmas time, instead of spending the whole of their money in the course of a few days' or weeks' debauchery, and leaving their families to starve while they go to their work on the Mexican side, or elsewhere, outside the Colony. Failing this the employers and contractors might be asked to keep back some portion of their men's pay, for the maintenance of their families during their absence. It is satisfactory to note that the births among the Indian population exceed the deaths by 5,114 of the former being registered against 109 of the latter.

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The deaths were fairly equally distributed amongst the months of the year ; no particular month or season appears to have been exceptionally unhealthy.

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RETURN of DISEASES and DEATHS in the YEAR 1899
at the COROSAL HOSPITAL.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES—			
Small-pox 	—	—	
Measles 	—	—	
Typhus 	—	—	
Dengue 	—	—	
Influenza 	—	—	
Diphtheria 	—	—	
Febricula 	—	—	
Enteric Fever 	—	—	
Cholera 	—	—	
Dysentery 	2	—	
Yellow Fever 	—	—	
Malarial Fever—			
(a.) Intermittent	24	—	
(b.) Remittent 	1	1	
(c.) Pernicious Remittent 	—	—	
Erysipelas 	—	—	
Pyæmia 	—	—	

Corosal Hospital—cont.

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Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES—cont.			
Tetanus 	—	—	
Tubercle 	—	—	
Leprosy—			
(a.) Tubercular 	2	—	
(b.) Anæsthetic Yaws 	—	—	
Syphilis—			
(a.) Primary 	1	—	
(b.) Secondary 	—	—	
(c.) Inherited 	—	—	
Gonorrhœa 	—	—	
Hydrophobia 	—	—	
Scurvy 	—	—	
Alcoholism 	—	—	
Delirium Tremens 	—	—	
Rheumatism 	9	—	
Rheumatic Fever 	—	—	
Gout 	—	—	
New Growth, non-malignant ...	—	—	
,, malignant 	—	—	
Anæmia 	1	—	
Diabetes mellitus 	—	—	
,, insipidus 	—	—	
Debility 	3	—	

Corosal Hospital—cont.

BRITISH
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Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES—			
DISEASES OF THE NERVOUS SYSTEM—			
Sub-section 1—			
Diseases of the Nerves—			
Neuritis	—	—	
Meningitis	—	—	
Myelitis	—	—	
Hydrocephalus	—	—	
Encephalitis	1	—	
Abscess of Brain	1	1	
Congestion of Brain... ..	—	—	
Sub-section 2—			
Functional Nervous Disorders—			
Apoplexy	1	1	
Paralysis	—	—	
Chorea	—	—	
Epilepsy	—	—	
Neuralgia	—	—	
Hysteria	1	—	
Sub-section 3—			
Mental Diseases—			
Idiocy	—	—	
Mania	—	—	
Melancholia	—	—	
Dementia	—	—	
Delusional Insanity	—	—	

Corosal Hospital—cont.

BRITISH
HONDURAS,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES— <i>cont.</i>			
Diseases of the Eye	2	—	
" " Ear	1	—	
" " Nose... ..	2	—	
" " Circulatory System	2	—	
" " Respiratory System	27	5	
" " Digestive System ...	21	1	
" " Lymphatic System...	1	—	
" " Urinary System ...	4	—	
" " Generative System—	—	—	
Male Organs ...	3	—	
Female Organs ...	1	—	
" " Organs of Locomotion.	—	—	
" " Cellular Tissue ...	—	—	
" " Skin	3	—	
Injuries, General	—	—	
" Local	46	5	
Surgical Operations	—	—	
Malformations	—	—	
Poisons	—	—	
Parasites... ..	—	—	
Other Diseases	9	—	
Total	169	14	

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ANNUAL MEDICAL REPORT FOR THE DISTRICT OF ORANGE WALK FOR THE YEAR 1899.

(Extract.)

INFECTIOUS DISEASES.

Nil.

PREVALENT DISEASES.

Without a doubt malarial fever takes the first place among the diseases met with in this district. The intermittent form of this malady is generally mild ; the remitting and pernicious forms on the other hand are severe, and often end fatally. Three cases of hæmoglobinuria fever occurred in the town of Orange Walk. These, though rarely met with, are of a mild type, and very different to the dreaded scourge of West Africa.

Of the parasitic diseases the *ascaris lumbricoides* and the *anchylostomum duodenale* are most frequently encountered, and they are responsible for a great deal of the anæmia which prevails among the Indian population. The *oxyurus vermicularis* occurs in young children, but is not so common as the two preceding, while the "jigger" and the "beefworm," the larval form of the *dermatobia noxialis*, have occasionally called for medical treatment. Diarrhoea and dysentery occur throughout the year, and without exception in cases where impure water is regularly drunk. Of the pulmonary diseases phthisis pulmonalis is the most formidable, and especially so, as one of the features of the malady is its rapid development and progress towards a fatal termination.

APPENDIX TO ANNUAL REPORT.

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HONDURAS,
1899.

Three cases of hæmoglobinuria occurred during the year 1899, and they may be placed on record, as the disease, or the symptom of one form of malarial fever, is, comparatively speaking, rare in this Colony. Cases have occurred previously in this district, and one case was recorded by Dr. Brown, of Stann Creek. In no way does this malady approach the dreaded blackwater fever of the West Coast of Africa, the only points of similarity being the presence of hæmoglobin in the urine, and the subsequent anæmia and prostration.

Case No. 1.—Miss L. P., ætat 10. Yucatecan girl, born in Orange Walk. I was called on October 14th, 1899.

I found the patient restless, complaining of backache and vomiting, the skin was jaundiced, and the temperature was 103 degs. Fahr. Dark, porter-coloured urine was passed earlier in the day, some of which was reserved for examination; it was opaque, and after standing a few hours deposited a dark, tarry-looking sediment. The treatment consisted of warm loin fomentations, a diuretic mixture of acetate of potash and tincture of digitalis, demulcent drinks frequently, and small doses of phenacetin, followed later by ethyl carbonate of quinine.

On October 15th the temperature was normal, and the patient felt much better. A slight relapse, however, occurred at noon, when the urine again contained hæmoglobin; at 3 p.m. the thermometer registered 101 degs., and at 6 p.m. it fell to normal, and there were no further symptoms of importance. Convalescence was retarded by an abscess of the axilla.

Note.—No quinine was administered before the attack.

Case No. 2.—Miss P. G., ætat 17. Yucatecan girl, just arrived from Merida, in Yucatan. She took ill on August 17th, 1899, with high fever and pain in the head and loins, for which quinine grains xii. was administered by her mother. During the night the urine was black, and a sample was reserved for inspection. I was called the next morning, August 18th, and found the patient prostrate. She was jaundiced, and complained of intense boring pains in the small of the back; the stomach was irritable, and a good deal of bile was vomited frequently. Temperature, 101 degs.; pulse, 130; respirations, 40.

As in the last case the treatment consisted of a diuretic mixture, demulcent drinks, and phenacetin, to reduce the temperature, and relieve the headache.

BRITISH
HONDURAS,
1899.

Hæmoglobinuria was passed on the 18th, 19th and 20th of August, and then suddenly stopped. The acute symptoms gradually subsided, and convalescence was tardy. On September 14th I was called again, but on this occasion there was fever alone, and the treatment terminated in a course of quinine and iron.

Case No. 3.—C. P. Yucatecan girl, ætat 10. Took ill on September 12th. She had slight fever during the night, and was reported to have been restless. In the early morning she passed a quantity of dark-coloured urine. I saw her shortly afterwards, and found temperature normal, and the skin moist and acting well. Beyond some slight pain in the back, and a feeling of weakness and lassitude, there was no symptom of gravity to record. In this case the urine resembled claret, and was translucent when the urine glass was held to the light; a black deposit of flocculent hæmoglobin occurred after a few hours' standing. The only treatment necessary in this case was a few doses of quinine in five-grain doses.

FREDERICK KEYT,

Assistant Colonial Surgeon.

RETURN of DISEASES and DEATHS for the YEAR 1899
at the ORANGE WALK HOSPITAL.

BRITISH
HONDURAS,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES—			
Small-pox	—	—	
Measles	—	—	
Typhus	—	—	
Influenza	—	—	
Diphtheria	—	—	
Febricula	—	—	
Enteric fever... ..	—	—	
Cholera	—	—	
Dysentery	4	—	
Yellow Fever	—	—	
Malarial Fever—			
(a.) Intermittent... ..	27	—	
(b.) Remittent	2	—	
(c.) Pernicious	—	—	
Erysipelas	—	—	
Pyæmia	—	—	
Septicæmia	—	—	

BRITISH
HONDURAS
1899

Orange Walk Hospital—cont.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES— <i>cont.</i>			
Tetanus	—	—	
Tubercle	—	—	
Leprosy—			
(<i>a.</i>) Tubercular	—	—	
(<i>b.</i>) Anæsthetic	—	—	
Yaws	—	—	
Syphilis—			
(1.) Primary	1	—	
(2.) Secondary	3	1	
(3.) Inherited	—	—	
Gonorrhœa	—	—	
Hydrophobia... ..	—	—	
Scurvy	—	—	
Alcoholism	—	—	
Delirium Tremens	—	—	
Rheumatism	3	—	
Rheumatic Fever	—	—	
Gout	—	—	
New Growth, non-malignant	—	—	
„ malignant	—	—	
Anæmia	11	1	
Diabetes Mellitus	—	—	
„ insipidus	—	—	
Debility	—	—	

*Orange Walk Hospital—cont.*BRITISH
HONDURAS,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES—			
DISEASES OF THE NERVOUS SYSTEM--			
Sub-section 1—			
Diseases of the Nerves—			
Neuritis 	—	—	
Meningitis 	—	—	
Myelitis 	—	—	
Hydrocephalus 	—	—	
Encephalitis	—	—	
Abscess of Brain 	—	—	
Congestion of Brain ...	—	—	
Sub-section 2—			
Functional Nervous Disorders			
Apoplexy 	—	—	
Paralysis 	2	2	
Chorea 	—	—	
Epilepsy 	1	—	
Neuralgia 	2	—	
Hysteria 	—	—	
Sub-section 3—			
Mental Diseases—			
Idiocy	—	—	
Mania	—	—	
Melancholia 	—	—	
Dementia 	—	—	
Delusional Insanity	—	—	

BRITISH
HONDURAS,
1899.

Orange Walk Hospital—cont.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES— <i>cont.</i>			
Diseases of the Eye	1	—	
" " Ear	—	—	
" " Nose	—	—	
" " Circulatory System	3	1	
" " Respiratory System	7	4	
" " Digestive System ...	9	—	
" " Lymphatic System	1	—	
" " Urinary System ...	3	—	
" " Generative System—			
Male Organs ...	1	—	
Female Organs ...	—	—	
" " Organs of Locomotion.	—	—	
" " Cellular Tissue ...	16	—	
" " Skin... ..	—	—	
Injuries, General	—	—	
" Local	15	—	
Surgical Operations	4	—	
Malformations	—	—	
Poisons	—	—	
Parasites... ..	6	—	

MEDICAL REPORT ON THE TOLEDO DISTRICT FOR THE YEAR 1899.

BRITISH
HONDURAS,
1899.

(Extract.)

The morbidity of the district has been high throughout the year 1899, probably on account of the exceptionally bad weather—an excessive rainfall of 142 inches as against 122 of the previous year—frequent and rapid changes of temperature, and sudden variations in barometrical pressure.

During the latter half of the year the amount of sickness, chiefly from trivial ailments, has been phenomenally large, but fortunately not of a character to influence the death-rate. Hence, as is often the case, the mortality returns give but a poor estimate of the general health average. On referring to Table I., annexed, it will be noticed that the death-rate has even been lower than in 1898 :—

Table I.

1897 ...	...	...	29·85	per 1,000 population.
1898 ...	...	...	34·43	„ „ „
1899 ...	...	...	33·37	„ „ „

The total number of deaths in 1899 was 146, as compared with 142 in 1898. But the estimated mean population has likewise increased.

Table II. shews the birth-rate per 1,000 for the last three years, and it will be noticed that that for 1899 is slightly smaller than the rate for 1898, though greater than that for 1897.

The total number of births registered in 1899 was 201, as against 193 in the previous year :—

Table II.

1897	...	...	...	45·39	per 1,000.
1898	...	...	...	46·79	„ „
1899	...	...	...	45·75	„ „

The Indian population, which, roughly speaking, can hardly be at most as much as one quarter of the entire population of the district, accounts for a large proportion of the deaths. For instance, in 1898 the total number of Indian deaths was 73 out of a total for the whole district of 142, *i.e.*, more than half; in 1899, out of a total for the district of 146, there were 60 deaths amongst the Indians.

The following table shews the total number of Indian deaths in the district for the last three years :—

Table III.

1897	...	...	...	...	...	72.
1898	...	...	...	...	...	73.
1899	...	...	...	...	...	60.

BRITISH
HONDURAS,
1899.

This being my third consecutive annual medical report for this district, to detail particulars with reference to water supply, food supply, disposal of refuse, markets and slaughter-houses, and cemeteries, would be merely to submit a repetition of my previous reports, and especially the report for the year 1897, for no noticeable change has taken place under any of these headings during the past year.

PREVALENT DISEASES.

My remarks on this subject in my report for 1898 (and 1897) are applicable to 1899. Mild types of malarial fevers have been the prevailing diseases. The common cold, bronchitis, and pneumonia probably would rank next in order of frequency; but of course it is difficult, if not impossible, to say for certain, on account of the absence of medical men in the district other than myself.

The peculiarly typical diseases of the tropics—leprosy, elephantiasis, &c., seem to be conspicuous by their almost entire absence.

Although I travel a good deal in my district, chiefly in my capacity as District Commissioner, I can safely say that I have not seen more than one case of elephantiasis and one rather doubtful case of leprosy during the last three years. No cases anything like beri beri have come under my notice. I am perfectly aware that the value of such negative information entirely depends on the means possessed of ascertaining the required facts, and the knowledge possessed of recognising those facts when seen. I can, however, assert that my opportunities for observation are numerous, and my experience of many of the diseases referred to, especially in beri beri, is not below the average.

P. T. CARPENTER,

*Assistant Colonial Surgeon,
District Commissioner, Toledo.*

Punta Gorda, 8th February, 1900.

MEDICAL REPORT ON THE CAYO DISTRICT FOR THE YEAR 1899.

BRITISH
HONDURAS,
1899.

(Extract.)

The total number of deaths recorded during the year was 91, giving a mortality of 29·546 per 1,000. This is a marked improvement over the figures for the preceding year. Infantile mortality was again very high. In my report for the Western district for 1898 I alluded to the high death-rate which obtained amongst children, and I mentioned some of the principal causes which conduced to it. The number of deaths recorded in children of five years of age and under during the year now under review was 47, or more than 50 per cent. of the total for the year. An epidemic of whooping-cough, which invaded the district in April, remained until the end of the year, and was largely responsible for the lamentable mortality, but I consider that improper feeding had also a great deal to do with it.

So long as the Cayo remains shut out from the rest of the civilised world, as it practically is at the present time, with its wretched food supply at exorbitant prices, I fear that little if any improvement in the death-rate can be looked for. Ready means of communication with the capital would ensure a supply of wholesome and good food at moderate charges within the reach of all; increased prosperity and a reduced death-rate would follow.

The following table gives the total number of births and deaths, and the rates per 1,000 per annum of the estimated mean population for the last four years :—

Year.			Deaths.	Death Rate per 1,000.	Births.	Birth Rate per 1,000.
1896	...	...	73	24·974	98	33·527
1897	...	...	107	35·973	104	34·965
1898	...	...	118	39·007	116	38·346
1899	...	...	91	29·546	133	43·182

INFECTIOUS DISEASES.

No infectious disease, as defined by section 48 of Ordinance 29 of 1894 was reported as having occurred in the district.

BRITISH
HONDURAS,
1899.

PREVALENT DISEASES.

Owing to my absence from the Colony during the year I am unable to say very much on this head. Upon referring to the records I find that 37 cases were returned uncertified as "fever," presumably malaria. This gives a death-rate equal to 12·013 per 1,000, as compared with 19·834 in 1898.

The term "fever," used so frequently in connection with uncertified deaths, is very vague, and conveys no definite knowledge of the true cause of death, which may be, and probably is in many instances, due, not to malaria, but to quite a different malady.

Dysentery was credited with five deaths, or 1·623 per 1,000 per annum of the estimated population, a slight increase on the figures for 1898, which stood at ·661.

An epidemic of whooping-cough appears to have invaded the district in the month of April, and stayed until the end of the year, occasioning the deaths of 11 children.

F. L. DAVIS,

Assistant Colonial Surgeon.

No. 5.

FIJI,
1898.

F I J I .

THE FIJI MEDICAL REPORT FOR 1898.

POPULATION.

1. The estimated population of the Colony on the 31st of December, 1898, was 121,789 persons; and was composed of the following classes, in the proportions mentioned:—

Europeans and other Whites	...	...	...	3,927
Aboriginal Fijians	...	...	...	98,954
East Indian immigrants and their children...	...	...	...	12,320
Melanesian and Malayo-Polynesian immigrants	...	...	...	2,074
Rotumans	...	...	...	2,165
Half-castes, &c.	...	...	...	1,238
All others	...	...	...	1,060
Total	...	...	...	121,738

The Melanesians are natives of the Solomon Islands and of the New Hebrides; the Malayo-Polynesians, classed as immigrants, are from the Gilbert Islands. The "Others" are composed of a medley of Samoans, Tongans, Tahitians, Chinese, Madrasis, Filipinos, and so forth, but are principally Samoans and Tongans. Only 20 Chinese, one African, and one Malay are known to be in the Colony.

BIRTHS AND DEATHS.

2. The total births registered numbered 4,078, an excess of three over those in the previous year. The deaths amounted to 4,713, as against 4,443 in 1897.

3. Of arrivals in the Colony there were 1,620; and of departures 947.

4. The birth rate obtaining amongst this mixed population as a whole is a datum of little value from a hygienic point of view. Calculated on the estimated mean population for 1898 it was 33·489 per mille; and the death rate, arrived at in a similar manner, was 38·70.

FIJI,
1898.

5. In the table of "Population and Vital Statistics," obligingly furnished by the Acting Registrar-General, which forms Appendix I., to this Report, some further details are shown in regard to the racial distinctions prevailing in the Colony. The extremely low birth rate obtaining among the Polynesians, therein referred to, is obviously due to the large preponderance of males (nearly as 6 to 1), accounted for by their being immigrant labourers. The "Polynesians" so called in that table are really Melanesians, with the exception of 200, who are Gilbert Islanders. But, even allowing for this disproportion in the sexes, and supposing them for the moment to be present in equal numbers, the birth rate of this class would still, *ceteris paribus*, not exceed 18 per mille. This result is probably due to the occurrence of polyandry, with its consequent infecundity; and to the registration of the births of children of "Polynesian" males by Fijian mothers as if they were Fijian births.

6. It is less easy to explain the statement that only 2·1 children per mille were born to the 629 women and 431 men of miscellaneous races ("others") in the Colony; but it is most probably brought about by (1) default of registration, which is commoner among these people than among more responsible residents, (2) by the occurrence of persons of mixed blood in this category, whose children are registered as half-castes, although their full title to that degree may be undetermined, and (3) by the migratory habits of the Samoans, who number many—especially the females, who usually prefer going to their mother country for the lying-in period.

7. In Return "A" the information required for comparison with the statistics of other Crown Colonies, as shown in their annual medical reports, is expressed.

PREVALENCE AND CHARACTER OF DISEASES EXPERIENCED.

8. The year was not productive of any unusual amount of sickness in endemic forms, but was characterized by the occurrence of several epidemic visitations, two of which—mumps and measles—are unusual in the Colony. The general type of illness was not to be called severe; nor was it, with the one prominent exception of measles, distinctly mild.

9. There is no source from which a record of the seasonal incidence of illness among European and other white residents can be compiled with any pretence to completeness. The monthly admissions to the Colonial Hospital of patients of this class are shown below; but their small number, and the fact that they are augmented during the healthy (cool) season by the presence of Her Majesty's ships, and of numerous sugar steamers, which are absent during the greater part of the hot months, renders them unreliable for the purpose in question.

ADMISSIONS TO THE COLONIAL HOSPITAL, YEAR 1898.

Fiji,
1898.*(Whites and Fijians only.)*

Cases.	Jan.	Feb.	Mar.	Apl.	May.	June.
Europeans & other whites ...	6	4	10	7	8	11
Fijians	46	43	80	46	58	34

Cases.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Europeans & other whites	3	11	13	5	3	1	82
Fijians	32	59	38	79	72	60	647

The fluctuations in the admission rate for native Fijians, also expressed in the table, are not wide; and they depend partly, too, upon accidental influences unconnected with season or climate.

7. Sickness among the people at large cannot be registered. But it is different among the indentured Indian immigrants, who work on plantations, and are under the continuous supervision of the district medical officers. A table is therefore presented in which are shown the actual number of admissions to estate hospitals, month by month, throughout the year, and which represents a summary of the particulars given in greater detail in Return "C," where the diseases, as well as the mere headings or divisions, are specified:—

NUMBER OF ADMISSIONS TO ESTATE HOSPITALS, YEAR 1898.

Indentured Indian Immigrants.

Class of Disease.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
General diseases ...	164	153	157	117	133	456	231	151	147	129	189	126
Local diseases ...	614	448	442	367	364	275	302	312	309	328	318	227
General injuries ...	—	—	2	1	—	—	—	—	—	—	4	4
Local injuries ...	37	37	40	30	34	34	50	32	76	52	37	26
Other conditions ...	2	1	8	1	—	4	—	6	5	—	2	10
Totals ...	817	639	649	516	531	769	583	501	537	509	550	393

11. From these figures it appears that local diseases prevailed less during the cool months than in the hot season, and that the same tendency manifested itself, on the whole, in regard to diseases of the general class, though in their case it was interrupted during the course of June and July by the occurrence of influenza in an epidemic form.

12. The accessions to the sick list during the hot months were chiefly due to diseases of the integumentary, digestive, and ophthalmic divisions; for the most part ulcers, diarrhoea, and conjunctivitis.

13. Of injuries, 496 in all, the majority took place in the course of the second half-year, which is the cane-crushing season, when the sugar mills are in full work; the number being, January to June, 215; July to December, 281. Of these, 11 were general injuries, with six deaths; the remainder were local injuries, with three deaths. It must be stated that three of the deaths caused by injury were due to judicial execution.

14. What has been said about the impracticability of registering sickness does not apply as regards deaths; the mortality returns, on the contrary, are collected with very fair precision. This is the more so, in fact, among the Fijians themselves than is perhaps the case with the unindentured immigrant population, at least, in so far as enumeration—apart from the determination of causes—is concerned.

In the table which follows the quarterly figures are given; and the death rate per mille calculated for each quarter on the estimated mean population of each race:—

Race.	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.	
	D.	Per mille.	D.	Per mille.	D.	Per. mille.	D.	Per mille.
Europeans ...	3	·81	6	1·62	9	2·43	5	1·36
Fijians ...	1,157	11·60	1,155	11·60	1,045	10·50	943	9·49
Melanesians ...	12	5·50	15	6·80	5	2·20	6	2·75
East Indians ...	63	5·17	53	4·35	55	4·51	57	4·68

The above table takes no account of Rotumans nor of mixed bloods, nor miscellaneous races. The figures are extracted from the registers of the offices in which they are officially recorded. They can scarcely be held to indicate any particular seasonal influence over mortality during the year to which they refer—1898.

**Fiji,
1898.**

METEOROLOGICAL CONDITIONS, YEAR 1898.

15. In Return "B," attached to this Report, will be found a Meteorological Return for the year, which speaks for itself.

The conditions of the islands, as represented by the observations officially recorded at Suva, are therein shown; but it must be understood that there is a remarkable variety in the climatic conditions met with in the several islands, at their different aspects, such as is inseparable from their position—situated as they are, well within the belt of the S.E. trade-winds, and spread over an area of ocean comprising four degrees of latitude and five degrees of longitude, and from their relative disparity in size.

These differences are not usually, however, considered to exert any special influence upon the public health over and above the naturally debilitating tendency which is common to them all in a somewhat marked degree. But it may be said that, speaking generally, ophthalmia, ringworm, and other dirt diseases prevail most in the districts where the rainfall is least equably distributed.

16. Causes, other than meteorological, by which the public health was more or less affected during the year were epidemic diseases introduced from abroad, the squalid and unclean details of domestic life by which members of the poorer class of natives are daily surrounded, insufficiency of nitrogenous elements in their regular dietary, the use of impure drinking water, the absence of milk and the substitution for it of unsuitable articles of food for infants and invalids, the preference shown by natives for insalubrious building sites, and their ignorance and lethargy in regard to improving them, lack of surface cleanliness in the villages, unskilful midwifery and child-nursing, illicit sexual intercourse, the prejudice in favour of allowing children to acquire yaws, the prevalence of tokelau and other forms of ringworm, and the indifference and ignorance on the part of the natives with regard to curing cutaneous disorders generally; lack of cleanliness of the person, clothing, mosquito nets, mats, water vessels, and cooking pots; and, finally, the inability of the native to grasp the idea of communicability of disease by physical contagion or inoculation, and his readiness to attribute infection to the operation of occult agencies, by way of retribution for real or fancied sins, against whose influence it is useless for him to contend.

PARTICULAR DISEASES.

17. The particular diseases by whose occurrence the year was distinguished were influenza, epidemic pharyngitis, mumps, and measles. Bowel diseases, among the non-epidemic ones, occupied as usual a pre-eminent position; and so did affections of the skin (ulcers, ringworm, &c.).

Influenza prevailed chiefly during the middle of the year, at which time also a few cases of mumps declared themselves; but the latter, after a recession of a couple of months or more, came more prominently under notice towards the fourth quarter, when it affected both Europeans and Fijians.

Pharyngitis, of a febrile and catarrhal kind, visited the Colony in an epidemic guise, as usual, at least twice during the year; but there were, in addition, a not inconsiderable number of cases of this character from time to time which were set down as such rather than as influenza proper.

In the first week of the month of August a case of measles was detected in Suva—the first which had occurred beyond the limits of the quarantine station since 1884. Inasmuch as two more cases directly connected with the first were found on the next and succeeding days, it was plain that the original common source of infection for the three had not been observed; nor, after the most minute search and enquiries, was it ever discovered. Fortunately, the disease proved of a mild type, and no death resulted, although nearly two hundred cases were notified altogether in the course of the ensuing three months, after which the infection died out. Coming after an interval of so many years, in an insular Colony, defended by quarantine precautions with—until 1898—somewhat remarkable success, the escape from serious consequences of its occurrence now must be regarded as a circumstance for special satisfaction. Quarantine for measles has now been abolished in the Colony; the experiment will not relieve the medical authorities from much anxiety, but the advantages to commerce and navigation, should measles again become prevalent in the Australasian neighbouring colonies, must afford unqualified satisfaction to the shipping interests and passengers alike, and the decision seems justified in the face of the result of the accidental introduction of measles in 1898, and of the subsequent granting of pratique to seven steamers in all with measles on board. A further report on the measles epidemic of 1898 forms the subject of Appendix II.

18. There has been no recurrence of beriberi in the Colony since the departure of the Japanese coolies early in 1895.

GENERAL SANITARY CONDITION.

19. The general sanitary condition of the Colony is preserved, in large measure, by the copious rains which wash the surface. The absence of malaria, in the ordinary sense of that term, forms, however, its main security against ill health. A few cases of malarial fever are recorded in Indian coolies, newly or comparatively newly arrived, from Hindustan; and, similarly, a case declares itself now and again in some white man who has come from a malarial country in which he has previously suffered one

Fiji,
1898.

or more attacks of the same nature. But such cases do not persist, nor does the malarial poison extend; and they usually recover speedily.

It would appear, in the light of modern pathological research, that the introduction of the proper intermediate host for the transmission of the malarial parasite to man may some day, not improbably, place Fiji in the unenviable situation to which Mauritius fell a victim thirty years ago, since there is no lack of malarial poison or of human subjects of it in the adjacent islands of the New Hebrides and Solomon Groups, with which we have fairly regular communication. The examination of specimens of the Fijian diptera now being collected will doubtless prove interesting and instructive for comparison with those of countries geographically and physically similar to this, but where malarial diseases are rife.

20. The two "towns" within the meaning of the Towns Ordinance are undrained, that is, they are not provided with sewers. Their sites being hilly, bordering the sea, and the subsoil being impervious and covered by only a thin layer of earth, the natural drainage, stimulated by the rains already mentioned, carries off most of the impurities which arise from the domestic *ménages* of the inhabitants. They are both supplied with an abundant provision of excellent water, conveyed in iron pipes from the mountain streams, out of reach of all human contamination.

Scavenging is attended to on the dry earth system, with removable galvanised iron pans; it is capable of much improvement in its details, a matter in which the inhabitants show themselves either long-suffering or else indifferent to a somewhat regrettable degree. The fact remains, however, that diseases of the diphtherial and typhoid class are virtually unknown in both Suva and Levuka.

There is no overcrowding; dwelling houses are, for by far the most part, detached and commodious; but exception may be made in the case of the numerous Indians' shanties, constructed of packing cases and biscuit tins, which abound in the outskirts, if not actually within the municipality of Suva. These hovels are distinctly unsuited to the climate, and they are too small in size; but they are not tenanted by more than one family each as a rule.

21. The principal drawbacks to good sanitation in the Colony are (1) ignorance of the populace on these subjects, and (2) lethargy and indifference to risk.

VACCINATION.

22. The number of primary vaccinations performed during the year with success was 1,126, which, with 243 secondary operations, make a total of 1,369 cases attended with favourable results.

23. The number was less than in the previous year, in consequence of its being determined, in the month of June, to abandon the practice of arm to arm vaccination, and to employ only glycerinated calf lymph. Calf lymph has been imported from New Zealand for some years for the use of the provincial vaccinators, and has given excellent results. But it was also deemed desirable to try the experiment of introducing glycerinated calf lymph from the Jenner Institute, at Battersea, to this distant Colony; and a parcel was accordingly received here in the month of September and immediately distributed. The results were, on the whole, satisfactory; but some of the medical officers unfortunately selected the children of Indian mothers for their test cases, and obtained failures, the causes for which may as truthfully be set down to the prompt and deliberate removal of the lymph by washing, as to any intrinsic defect on its part. Dr. Joynt, the District Medical Officer at Labasa, drew attention to a case in which vaccinia, produced by the Battersea lymph, was attended by the development on the tenth day by a macular eruption on the face, legs, and to a slight degree on the trunk, lasting two days. In a child unsuccessfully vaccinated with Battersea lymph (six weeks after it was sent out from the Institute) the humanised lymph of the child who had the macular eruption was used for a second attempt, which succeeded; but this case also developed the macular eruption—on the eighth day—all over the body. It faded away, and was followed by a second eruption of the same character.

The experiment of using glycerinated calf lymph prepared in England is being repeated.

24. The adult population of all grades is well vaccinated; but it is to be feared that there is a growing laxity among the whites to neglect this essential precaution, although it is very important that they should set a good example in the matter to the coloured people.

A suggestion offered to the School Boards to assist in facilitating the vaccination of children attending the public schools was not acted upon. Gratuitous vaccination with glycerinated calf lymph is provided at Suva weekly; but nothing short of prosecution seems likely to bring the parents of unvaccinated children up to the scratch, and it is doubtful whether, in the face of legislation enacted last year at home on this subject, that course would now be supported by the executive authorities.

25. Small-pox has never existed in the Colony beyond the limits of the quarantine station.

COLONIAL HOSPITAL.

26. In the following table are shown the numbers of patients of various races admitted during the year to the Colonial Hospital; together with the numbers of deaths, and the death rate

FIJI,
1893

per centum. The admissions include the cases remaining in the wards on the 1st of January from the foregoing year:—

Classes treated.	No. of cases.	No. of deaths.	Death-rate per cent.
Europeans and other whites ...	82	6	7.31
Fijians	731	8	1.09
Melanesians	78	9	11.53
East Indians	250	15	6.00
Miscellaneous	37	2	5.40
Total	1,178	40	3.38

The classification of diseases is not included here, as it appears in the Colonial Blue Book.

The number of surgical operations performed at the hospital was as follows: In European cases 30; in Fijians 83; in Melanesians 16; in East Indians 27; in mixed races and mixed bloods 9; total 165.

There were only two admissions for enteric fever, and the disease was in each instance acquired beyond the Colony.

LUNATIC ASYLUM.

27. At the close of 1897, 16 patients remained under treatment in the Lunatic Asylum. In the course of the year under review the admissions numbered nine, six males and three females. There were discharged four males, of whom two were considered cured, and two not improved; and one female was also discharged, relieved. Four deaths occurred, of whom one was a female. The same number remained upon the books of the asylum therefore at the end of the year as at its beginning.

The fatal cases were due respectively to granular contracted kidney, syncope following a maniacal attack, paralytic dementia, and puerperal septicæmia (admitted with).

EYE THROAT AND EAR INFIRMARY.

28. A number of casual cases were received for treatment in the Eye, Ear, and Throat Infirmary, under the care of the District Medical Officer at Rewa (Naduruloulou Station), and the following tabular statement of them, and the results, presents a summary of the register of the institution for the year. It may

be mentioned that this undertaking is carried on without any cost whatever to the Government, except for the few drugs and dressings it uses; that the natives contribute nothing but the buildings; the patients and their friends are encouraged to furnish their own rations as much as possible, and that the deficiency is made up by hook or by crook from voluntary taro plantations, kept up by the native student and the District Medical Officer's boat's crew. As a hospital, it perhaps therefore occupies a unique position, inasmuch as it has no revenue and practically no expenditure.

29. The District Medical Officer reports that cases of a mild type of simple ophthalmia, and a few cases of ulcers of various parts of the body, whom he treated as out-patients, are not recorded in the list.

Cases Admitted to the Infirmary during 1898.

No. of Cases.	No. of Operations Performed.	Results.			
		Good.	Improved.	Not Improved.	Deferred.
Males (25) ...	14	17	3	2	3
Females (35) ...	18	23	5	5	2
Total (60) ...	32	40	8	7	5

30. Appended to this Report will be found copies of a Report submitted to His Excellency in January last, in which are recorded particulars of the epidemic of measles referred to in §17, together with its appendices. A valuable and instructive monograph on the occurrence of Frambœsia in patients of East Indian parentage, by Dr. Henry N. Joynt, M.A., forms the subject of Appendix III. to this Report, and I have much pleasure in commending the laborious and very pertinent work done by this officer to His Excellency's notice.

The concluding Appendix, No. IV., contains the relation of several cases of poisoning by one of the Atropaceæ believed to be *Datura Stramonium*, perpetrated by Indian coolies upon others of their class with intent to rob. This communication carries also a special interest and value, on account of so many of our Crown Colonies having a considerable East Indian population, among whom the same form of crime is not infrequently met with.

B. GLANVILL CORNEY,
Chief Medical Officer.

Suva, Fiji,
27th March, 1899.

FIJI,
1898.

SCHEDULE OF ENCLOSURES TO THE MEDICAL REPORT
FOR THE YEAR 1898.

A.—Return of Statistics of Population.

B.—Meteorological Return.

C.—Nosological Return.

Appendix I.—Acting Registrar-General's Statement of Population and Vital Statistics.

Appendix II.—Report on the re occurrence of Measles in an epidemic form in the Colony, in the year 1898. By the Chief Medical Officer.

Appendix III.—A Paper on the occurrence of Yaws or Framboesia amongst Indian Immigrants in Fiji. (With eight photos.*) By the District Medical Officer at Labasa.

Appendix IV.—Relation of cases of poisoning by Datura Stramonium. By the Resident Medical Superintendent of the Colonial Hospital at Suva.

RETURN A.

Return of the Statistics of Population for the Year 1898.

Return of Statistics of Population for the Year 1898.	Europeans and other Whites.	Aboriginal Fijians.	Rotumans.	Melanesians.	East Indians.	Mixed and Miscellaneous.
Number of inhabitants in 1897 ...	3,401	99,773	2,143	2,278	12,025	2,178
Births during the year 1898 ...	84	3,481	115	7	362	29
Deaths during the year 1898 ...	30	4,300	93	38	227	28
Immigrants during the year 1898	726	—	97	103	567	127
Emigrants during the year 1898	254	—	2	276	407	8
Inhabitants in 1898 ...	3,927	98,954	2,260	2,074	12,320	2,298
Increase ...	526	—	117	—	295	120
Decrease ...	—	819	—	204	—	—
Net increase 35	—	—	—	—	—	—

FIJI,
1898.

RETURN B.

METEOROLOGICAL RETURN FOR THE YEAR 1898.

(SUVA, FIJI.)

Lat. 18° 8' S., Long 178° 26' E.

Months.	Temperature.					Rainfall.		Winds.		Remarks	
	Solar Maximum.	Minimum on grass.	Shade Maximum.	Shade Minimum.	Range.	Mean at 9 a.m. (Sea level.)	Amount in inches.	Degree of Humidity.	General Direction.		Average Force.
January ..	Not Observed.	Not Observed.	86°3	75°0	90°4 71°2	81°7	14°14	74	E.	2	
February ..			86°6	75°2	91°8 73°0	82	14°42	76	E.S.E.	2	
March ..			88°5	74°9	91°6 72°3	83	12	72	E.N.E.	2	
April			85°7	74°2	90°2 71°5	81	12°83	76	E.N.E.	2	
May			85°3	72°3	93°2 67°5	80	6°04	73	S.E.	2	
June			81°8	71°1	88°8 66°2	77	12°81	79	E.S.E.	2	
July			82°3	71°7	89° 67°7	77	9°39	83	E.S.E.	2	
August ..			79°8	69°2	84°3 61°6	75	6°16	77	E.S.E.	2	
September ..			81°5	77°0	86°8 63°5	78	6°54	73	E.S.E.	3	
October ..			83°5	69°4	87°6 61°5	80	1°28	63	S.E.	3	
November ..			83°9	72°5	86°4 68°8	80	8°43	69	S.E.	2	
December ..			86°8	72°6	90°8 68°2	82	5°58	68	E.S.E.	3	
			83°3	72°9	93°2 61°5	79°7	9°13 109°62	74	E.S.E.	2·2	

The mean maximum reading of the barometer for the year was 30°031; and the mean minimum 29°671. The highest reading was 30°123; and the lowest 29°472. There were no hurricanes; but 45 thunder-storms were recorded. The greatest rainfall in one day was 3·97 inches, and the number of days on which rain fell 275.

RETURN C.

FIJI,
1898.

NOSOLOGICAL RETURN.

RETURN OF DISEASES AND DEATHS IN 1898 AT THE
ESTATE HOSPITALS, FIJI.

Diseases.	Yearly Total.	
	Cases.	Deaths.
GENERAL DISEASES—		
Smallpox	—	—
Measles	—	—
Typhus	—	—
Dengue	—	—
Influenza	551	2
Diphtheria	—	—
Febricula	259	—
Enteric Fever	—	—
Cholera	—	—
Dysentery	252	7
Yellow Fever... ..	—	—
Malarial Fever	85	—
(a.) Intermittent	—	—
(b.) Remittent	—	—
(c.) Pernicious R.	—	—
Erysipelas	—	—
Pyæmia	—	—
Septicæmia	—	—
Tetanus	10	9

NOSOLOGICAL RETURN—*cont.*Fiji,
1898.

Diseases.	Yearly Total.	
	Cases.	Deaths.
GENERAL DISEASES— <i>cont.</i>		
Tubercle	17	11
Leprosy	2	1
(<i>a.</i>) Tubercular	—	—
(<i>b.</i>) Anæsthetic	—	—
Yaws	162	—
Syphilis	—	—
(<i>a.</i>) Primary	55	—
(<i>b.</i>) Secondary	152	—
(<i>c.</i>) Inherited	33	14
Gonorrhœa	—	—
Hydrophobia	212	—
Scurvy... ..	—	—
Alcoholism	—	—
Delirium Tremens	—	—
Rheumatism	46	—
Rheumatic Fever	—	—
Gout	—	—
New Growth, non-malignant	—	—
New Growth, malignant	—	—
Anæmia	258	6
Diabetes mellitus	—	—
Liabetes insipidus	—	—
Debility	79	15

NOSOLOGICAL RETURN.—*cont.*Fiji,
1898.

Diseases.	Yearly Total.	
	Cases.	Deaths.
LOCAL DISEASES—		
DISEASES OF THE NERVOUS SYSTEM—		
Sub-section 1 :		
Diseases of the Nerves—		
Neuritis	—	—
Meningitis	4	2
Myelitis	1	1
Hydrocephalus	—	—
Encephalitis	—	—
Abscess of Brain	—	—
Congestion of Brain	—	—
Sub-section 2 :		
Functional Nervous Disorders—		
Apoplexy	—	—
Paralysis	1	—
Chorea	1	—
Epilepsy	1	1
Neuralgia	11	—
Hysteria	—	—
Convulsions	5	4
Sub-section 3 :		
Mental Diseases—		
Idiocy	3	—
Mania	1	—
Melancholia	—	—
Dementia	—	—
Delusional Insanity	—	—

NOSOLOGICAL RETURN.—*cont.*F131
1898

Diseases.	Yearly Total.	
	Cases.	Deaths
LOCAL DISEASES—<i>cont.</i>		
Diseases of the Eye	1,377	—
" " Ear	35	—
" " Nose	1	—
" " Circulatory system	6	—
" " Respiratory system	535	23
" " Digestive system ...	968	36
" " Lymphatic system	36	—
" " Urinary system ...	6	2
" " Generative system...	5	—
" " Male organs ...	42	—
" " Female organs ...	41	—
" " Organs of locomotion	32	—
" " Cellular tissue ...	270	1
" " Skin... ..	978	—
Diseases connected with pregnancy ...	29	—
" " " parturition	16	2
Diseases of the female breast... ..	2	—
Injuries, general	11	6
" local	485	3
Surgical operations	—	—
Malformations	—	—
Poisons	1	—
Parasites... ..	22	—
Undefined diseases.	16	3
Grand total	7,112	148

APPENDIX I.

POPULATION AND VITAL STATISTICS, 1898.

	Births.			Birth-rate per 1,000.	Deaths.			Death-rate per 1,000.	Marriages.	Arrivals.	Departures.	Estimated Population at 31-12-98.			Population to the square mile.
	M.	F.	T.		M.	F.	T.					M.	F.	T.	
Europeans ...	46	38	84	24.7	21	9	30	8.8	27	726	254	2,444	1,483	3,927	507
Fijians...	1,752	1,729	3,481	34.8	2,308	1,996	4,300	43.09	1,141	—	—	52,656	46,298	98,954	127.8
Half-Castes ...	10	17	27	21.9	9	11	20	16.2	17	—	—	615	623	1,238	159
Indians ...	192	170	362	30.1	126	101	227	18.8	169	567	407	8,293	4,027	12,320	1591
Polynesians ...	5	2	7	3.07	33	5	38	12.2	15	103	276	1,772	302	2,074	267
Rotumans ...	65	50	115	53.6	38	55	93	43.3	31	97	2	1,034	1,131	2,165	279
Others ...	1	1	2	2.1	4	4	8	8.4	4	127	8	431	629	1,060	136
Totals ...	2,071	2,007	4,078		2,532	2,181	4,713		1,404	1,620	947	67,245	54,493	121,738	
Totals in 1897...	Birth rate 33.45 Total births 4,075			Death-rate 36.47 Total deaths 4,433			Marriage rate 10.69 Total marriages 1,303			67,410			54,388	121,798	

FILE,
1898.

Fiji,
1898.

APPENDIX II.

REPORT ON THE OCCURRENCE OF MEASLES IN AN EPIDEMIC FORM IN THE COLONY IN THE YEAR 1898.

Medical Department, Suva,
31st January, 1899.

SIR,

I HAVE the honour to submit for the consideration of His Excellency the Governor the following report upon the prevalence of measles in the Colony during a portion of last year, which, however, has now happily terminated without serious results, and has, as a matter of fact, actually afforded us an instructive and valuable lesson on the difficult subject of immunity against infectious disease.

2. The particular infection with which we were brought face to face gained access to the shores of the Colony no one knows when or by what agency. The first recorded case whose origin is thus veiled was met with in the person of a half-caste girl, the offspring of a European father by a native (Rotuman) mother, on the 3rd of August. She had been continuously living at Suva for several months; and both she and her sister, who developed the measles rash on the next day, had undergone an attack of measles in Levuka 15 years previously. Her husband, a chief of Rotuma, had had measles at Auckland (N.Z.) in 1893. They were thus all three familiar with the disease, but could offer no information as to how they came to be re-infected, even on the closest cross-examination. The husband was in the habit of working on board sugar steamers while in the Group; but no case or suspected case of measles was heard of in any vessel arriving in the Colony during the year up to the 26th of July.

3. On that date the Canadian-Pacific mail steamer "Aorangi" arrived at Suva from Sydney, where measles was then epidemic, having two well defined cases on board—one of them being the mother in a family consisting in all of five persons, passengers for Fiji, and the other, one of the ship's firemen. The "Aorangi" was kept in complete isolation during the whole of her stay in port, which extended over 20 hours only, arrangements being made, meanwhile, for the reception of the Fiji passengers—19 in number—and the fireman, at the quarantine station, on the islands of Nukulau and Makuluva. They were all removed thither at 7 a.m. on the morning of the 27th without any com-

munication with the shore, save in the rigidly protective manner prescribed in the Quarantine Ordinance (No. XXV., of 1880).

Fiji,
1898.

4. This isolation on the two islets was maintained until the case of the half-caste girl, Jiese, above-mentioned, declared itself at Suva on the early morning of the 3rd of August, with the rash fully out.

5. This short interval between the arrival of the infected steamer and the occurrence of cases of measles in the town of Suva clearly proves that the two outbreaks were entirely unconnected with each other.

6. The patients at the quarantine station and the principal suspects, to the number of six, had been quartered on the islet of Makuluva, apart from the rest of the passengers, who were located on Nukulau. Upon the existence of measles becoming an established fact in the town of Suva, however, it was not thought justifiable to detain the hitherto unaffected batch any longer; they were accordingly released from quarantine on the 6th of August, and removed to their homes at Suva, where they were allowed freedom, subject to inspection. No cases occurred among these thirteen of the passengers, either on the quarantine station or subsequently.

7. The further course of the epidemic, which thereupon developed at Suva and a few other places in the Colony, is indicated in the Appendix "A" to this Report; and the restrictive measures adopted against its extension are shown in detail in the ensuing ones.* They consisted, broadly, in (1) declaring Part III. of the Public Health Ordinance, relating to apprehended epidemic disease, in force; (2) issuing printed instructions in English and in Fijian for the recognition, treatment, and precautionary measures against the disease; and (3) framing and enacting regulations to the same purpose, by the Board of Health.

8. It is very satisfactory to be able to report that these measures were followed by quite an unlooked for amount of success. The number of cases notified in Suva during the entire month of August in persons of all nationalities were as follows:—

Suva.					
Native Fijians	...	...	...	...	25
Europeans	...	...	...	...	7
Half-caste Fijian	...	...	...	...	1
Half-caste Manila Filippino	...	...	...	...	1
Half-caste Rotumans	...	...	...	...	3
Half-caste Toga-Viti child	...	...	...	...	1
Samoan child	...	...	...	...	1
Naikorokoro.					
Native Fijian students	...	...	...	...	14
Total for August	...	...	...	...	53

Fiji,
1898.

9. In the course of the month the infection extended, however, to Levuka, Beqa, and Waiqanaki; and cases began to crop up in these places quite early in September. The first ones met with at Levuka occurred on the 1st; they afterwards mounted up to only 20. Thirty-three more occurred at the native Technical School; 22 at Beqa; six at Bua; and a solitary one (diagnosis doubtful) at Natewa; all these were native Fijians except those at Levuka, which were all Europeans or various degrees of mixed bloods.

10. The cases in Suva during September amounted to 40, of all nationalities and grades. One of the earliest actions taken there had been to close the schools, on the 9th of August, at first for fourteen days and subsequently for another like period. This was attended by excellent results; out of a total number of pupils at the public school, averaging a daily attendance of rather over 90, only six children caught the illness, of whom three belonged to one family. After the re-opening of the school children from infected houses were, of course, still excluded, by order of the Local Sanitary Authority with whom the principal teacher loyally co-operated.

The whole number on the roll of the school for the month of August was 104, nearly every one unprotected by a previous attack; the percentage of cases among them was therefore 5.76 only, which, considering the fact that they are all day scholars and reside within a radius of two miles (measured by road) from the school house, suggests that either the nature of the infection was very mild, or that the precautions taken against its spread were efficient.

11. Only six cases are known to have occurred later than the end of September; and sufficient time has elapsed since then to warrant the assumption that the epidemic is now extinct. It is a matter for congratulation that not a single death has taken place from measles during this visitation. This happy result is doubtless attributable to (1) the mildness of the type; (2) the care bestowed upon the invalids by those in charge of them; the non-concentration of cases, which was a consequence of the large proportion of the population being protected by a previous attack, assisting to ensure adequate attention to the sick, of course; and (3) the rigour and enforcement of the regulations made by the Board of Health to meet the emergency. The profound impression made by the epidemic of 1875* in this Colony operated now to alarm the people to a materially greater degree than could have been the case without that object lesson before them; this consideration affected not only the elder natives, who had been through the 1875 trouble themselves, but also many of the members of the white population.

* Wrongly quoted by Hirsch as 1874 in his well-known handbook of Geographical and Historical Pathology, 1883 edition, Vol I., p. 167.

12. It may not be altogether *inutile* to recapitulate, by way of contrast, the events of that year, in so far as they relate to this subject.†

In 1875 the source of the infection was quite clear—Ratu Cakobau's son and an attendant being attacked by measles on board H.M.S. "Dido," while on the passage from Sydney to Fiji. No restrictions were imposed upon the infected persons or upon others; and, there being a conference in connection with the Deed of Cession, at which native deputies from every province in the country were in attendance, during the two weeks when Ratu Cakobau himself was ill of the disease in the same village, the infection was promptly conveyed by the returning deputies and their suites to the native population in every corner of the islands at practically the same moment. That population was, moreover, universally susceptible to the measles poison at that time; the disease never having existed in these parts of the Pacific previously. As a necessary consequence of this combination of circumstances the natives were prostrated in a wholesale manner, one and all in a village being infected within a few days of each other; and in the majority of places there were none left to minister to the sick in such simple and unrestricted manner as they might, nor even to keep them supplied with the barest necessities in the way of food and water, nor to bury the dead. The result may be easily pictured. Such as survived the primary disease, which in that epidemic affected a severe, instead of as in the 1898 one a mild, type, were surrounded by insanitary conditions of the worst kinds; dysentery, pneumonia, and other complications and sequelæ carried them off in thousands every week, so that at the end of the epidemic (which in four short months died out through sheer lack of fresh material to attack) only 110,000 natives out of a pre-existing 150,000 remained to hand down the legend to their descendants.

After this terrible outbreak a few cases of measles continued to crop up here and there among the white settlers in the Colony, and among the newly-born children of the natives until 1884. They were reinforced by three distinct introductions of the disease from Australasian ports—one from Sydney in 1880, one from Auckland in the same year, and another from Melbourne; but since the above-mentioned date there have been no instances of measles in the Colony (beyond the limits of the quarantine station) until the case of Jiese, the half-caste girl, mentioned in par. 2 of this Report, and the source from which she and the other earliest cases of the recent epidemic presumably derived their infection in July last.

† For details *vide* C. O. Correspondence, C. 1624, No. 23, 1875. Also "Lancet" of June and July, 1875; "Medical Times and Gazette" of March, 1877; Trans. Epidemiological Society of London, N.S., vol. iii., 1884; "Fiji Times" files for 1875; Report of Decrease Nat. Pop. Commission, Fiji, 1896, § 100; &c., &c.

Fiji,
1898.

13. In contrast to the ravages of the disease in 1875 the fact that in the 1898 occurrence there were in all 181 cases notified, and no death, although a good many thousands of surviving children born in the interval must undoubtedly be regarded as susceptible, has now to be recorded.

14. In these circumstances the question arises, "Ought one to quarantine ships with measles on board arriving in the Colony hereafter?" It may also be asked, "Would one be justified in attempting to differentiate between types of the measles infection?" The answer to the latter query, as regards the regulation of questions of quarantine, must probably be that such differentiation cannot be expected to come within the range of practical sanitation, and should not be attempted. The former question has been partly settled by experiment during the past year in this very port; for, though the type in Fiji was mild, the mortality in Australia was distinctly disquieting, and yet *no harm resulted from admitting to pratique in this Colony seven steamers with actual cases of measles on board in the months of August, September, and October*, while the local epidemic existed. Inasmuch, however, as the extent of the epidemic was not great—owing to the mildness of the type, and to the precautions taken to check its spread—the experiment may be claimed to have not been crucial, and its fortunate result to be inconclusive. These considerations suggest that, while the resumption of quarantine measures against shipping, for measles (with their attendant expenses, delays, and other drawbacks, which so gravely harass the interests of commerce and navigation), should not now be proposed, their abandonment cannot be conceded without involving a considerable amount of anxiety.

15. The moral is that, having yielded our outermost line of defence, we should strengthen our internal resources against the enemy; but measles, whooping-cough, and influenza are perhaps the most difficult zymotics to combat in that respect.

Although, therefore, one is faced by the necessity for accepting in future the risk, the experience of the 1898 epidemic, so far as it went, is decidedly encouraging as regards the chances of unfavourable consequences.

Measles is sure to recur in short cycles of from four to seven years in the Australasian Colonies, and in Honolulu, and Vancouver; and the annual Indian immigrant vessels will doubtless continue to bring numerous cases to us from Calcutta, as they have done in the past. While, however, we may feel some misgivings as to the result of ignoring measles as a quarantinable disease, for the future the relief so afforded to all persons and institutions connected with the shipping trade will be enormous.

16. One other point remains to be alluded to—a doubt as to whether a mild attack is protective against the infection when it happens to be derived from cases of a severe type. It is well

known that measles may and does attack some persons a second and even a third time, but such instances are few. The experience thus gained suggests the conclusion that the protection afforded by a previous attack, such as that protection broadly speaking is, is not appreciably affected by the nature of the type; but the subject is capable of being argued in both directions with reason. At least five of the cases recorded here in 1898 were second attacks; they were all described by the patients as mild in comparison to their previous ones.

17. Concurrently with the epidemic now recorded there occurred in Suva and other places near a number of cases of mumps, which is an uncommon event in the Colony, and also of pharyngeal catarrh, with very marked febrile symptoms. Influenza of the common catarrhal type was prevalent during the same and later months of the year as well.

I have, &c.,

B. GLANVILL CORNEY,
Chief Medical Officer.

APPENDICES.

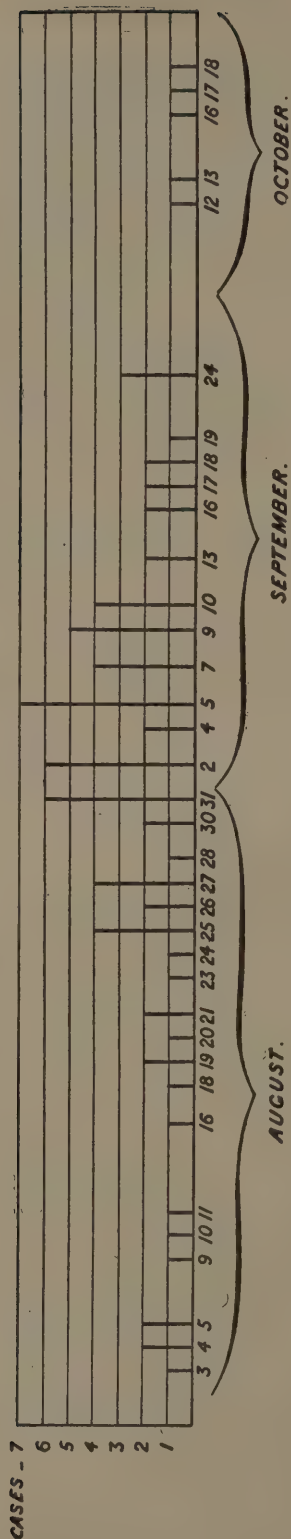
-
- A. Incidence of the cases at Suva, etc.
 - B. Regulations enacted by the Board of Health.*
 - C. Placard for infected houses.*
 - D. Recommendations relating to the recognition, nursing, treatment, and restriction of measles (Eng.).*
 - E. Fijian version of the same, with modifications to suit the natives' circumstances.*

* Not re-printed.

SUB-APPENDIX A.

MEASLES EPIDEMIC 1898.

Diurnal Incidence of Cases at Suva.



APPENDIX III.

FIJI,
1898.A PAPER ON THE OCCURRENCE OF YAWS OR FRAMBOESIA
AMONGST INDIAN IMMIGRANTS IN FIJI.

BY HENRY NOBLE JOYNT, M.A., M.D.

Government Medical Officer.

1. Yaws is essentially a tropical disease, howbeit not a widely-spread one. It appears, broadly speaking, to be confined to certain definite, although widely-separated, regions of the tropics. Originating probably about the West Coast of Africa, it has spread to other parts of tropical Africa, and has been carried by the slave trade to the West Indies and parts of tropical South and Central America. A second centre lies in the South Pacific, in the island groups of Fiji, Tonga, and Samoa, and perhaps a few other groups. A third centre is mentioned by Hirsch,* found in the East Indian Archipelago, in the Islands of Java, Sumatra, Celebes and the Moluccas. A fourth centre perhaps occurs in Ceylon. Dr. Nicholls, however, disputes the occurrence of yaws outside the Africo-American centre, and remarks, "that although there exist in Oceania certain diseases bearing a resemblance to yaws, their identity with it has not been established in so conclusive a manner as to place the question beyond the region of doubt."†

Hence, in this paper I shall endeavour to furnish more material for a comparison between the West Indian yaws and the Fijian "coko" (thoko). My observations are drawn, however, chiefly from East Indian immigrants in Fiji; and, although I am fairly familiar with the disease amongst the native Fijians I have never had the opportunity of studying it in detail such as the plantation hospitals afford of studying it amongst Indians.

2. In Fiji the disease of "coko" is endemic, and so widely is it spread that probably there does not exist an adult native who has not contracted it before adolescence. So habituated is he to the malady that it is a common native belief that no child will grow up to healthy manhood unless he has passed through an attack of koko.

3. On the other hand yaws is said to be practically unknown in India. It may occur in Assam.‡ The Indian coolie does not recognise it; he calls it the "Fijian disease." But, as in the West Indies from the negro, in Fiji he quickly contracts yaws from the native. Nicholls remarks that in the West Indies, "the disease is peculiarly liable to attack the East Indian immigrants"; so in Fiji, owing to his dirty habits, the coolie rapidly contracts and propagates koko.

* "Hirsch's" Geographical Pathology, Vol. II., p. 105, N.S.S. edition.

† Nicholls: Report on Yaws, 1894, p. 280.

‡ Manson: Tropical Diseases, p. 423.

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4. Indians passing through or living in native villages, Indian children mixing with Fijian children, probably contract the disease through abrasions or breaches of surface of the skin. Ulcers of the naked feet and legs, cuts on the hands, abrasions on the lips or about the mouth, are the more usual sites of inoculation;* flies, dirty infected clothes and rags, filthy mats in houses, &c., are the agents. In children and adult "free" Indians infection may usually be traced to one or other of these sources; but when once yaws has made an appearance on a plantation amongst the Indian labour sexual intercourse is, I believe, the most common mode of propagation. In the great majority of cases I find that the first lesion, the site of inoculation—the "primary sore," if I may use the expression, or the mother yaw, the "tina-ni-coko," as the Fijians call it—is situated on the genital organs. If on the penis, one, but more often, several sores, small, shallow, and soft, are found on the sulcus, the corona or the frænum, or more rarely on the prepuce. These sores rapidly increase in size, forming reddish or yellowish ulcers, sometimes deep and excavated, sometimes fungating, with a brawny, hard, often cartilaginous, base. The surrounding tissues inflame, and may cause phimosis. The retained secretions become fœtid and purulent, and ultimately circumcision is necessary. These ulcers are usually linear, encircling segments of the glans penis, or even forming a complete ring. I have never seen a suppurating bubo result; at most a small hard bubo is the only result; and bubonic pain is never complained of. These primary ulcers must be distinguished from yaw granulomata of the penis in the later manifestations of the disease.

In women the sores are placed on the nymphæ, the posterior commissure, and the labia majora. They are usually small, multiple, oval or elongated, and papular, perhaps forming lines or chains along the free edge of the nymphæ. Perhaps owing to the fact that there is less tension about the female pudenda, and that the secretions have a free escape, fungating sores and cellular infiltration are rare.

5. Should inoculation take place at the site of an ulcer, sore, or cut, it makes no attempt to heal, but becomes unhealthy; the edges become raised and angry looking; then the floor fungates; and finally a large granulomatous tumour, perhaps an inch or more across, and one-eighth of an inch high, forms, with may be smaller surrounding sores. This is the so-called "mother yaw" (tina-ni-coko). It is often obstinate in healing, and persistent.

6. In from two to eight weeks after inoculation the eruption appears. The rash is variable in its initial forms, in its magnitude and in its distribution; but in whatever form it occurs, the normal course is towards the evolution (or later, the involution)

* In one case a mother contracted the disease from suckling her infected child, the mother yaw appearing on the breast nipple.

of a granuloma, "the typical yaw." The various manifestations form the stages of this evolution; and as the evolution may be interrupted at any stage, and involution prematurely set in, and as the different stages may occur together in a mixed eruption, the resulting appearance may be puzzling to an inexperienced observer, who has only read of or seen the typical yaw stage.

7. From Dr. Nicholls' description* I have abstracted the stages of evolution and involution of the West Indian yaw, as follows: (1) The squamous stage or *pian dartre*, consisting of (a) smaller or larger rounded, non-elevated patches of furfuraceous desquamation, or (b) raised patches covered with small scales. (2) The papular stage, or *pian gratelle*; minute, yellow-pointed papules arise on the squamous patches, and either abort, remain stationary, or steadily increase in size, till (3) the yaw tubercle, or granuloma—the typical yaw—is reached. (4) The stage of involution by absorption, ending finally in (5) a macula, black in the dark-skinned races.

8. On the plantations in Fiji the Indian probably comes into hospital at an earlier stage than the negro in the West Indies—generally after the "primary" sore of inoculation appears, and especially so in the venereal cases. Hence, he is placed under specific treatment at an early date, and such treatment may cause a modification in the evolution of the eruption, which, in the untreated state does not normally abort before the attainment of the pathognomonic granuloma. Generalizing my observations on these early-treated cases, the course of the eruption may be stated as follows: A macular rash, of a dark reddish tint, is noticed on the trunk and arms, on both flexor and extensor aspects, and is best seen when viewed by an oblique light and at a little distance from the patient. It consists of small rounded, slightly raised, sometimes closely set maculæ, at times suggestive of urticaria. After a few days these either develop into papules or become darker, of a greyish purple colour, glazed and shining, with minute scales or furfuraceous desquamation on the surface. The epidermis appears as if loose on the dermis and is thrown into minute parallel folds or puckers, best seen with a lens. On stretching the skin in the neighbourhood of the spot the wrinkles disappear, and a smooth, shining dark macula is left. Gradually the glazed appearance vanishes, and a dark blackish stain, is left, which may last for some time. If the macula does not resolve as described, the elevation above the skin increases, and slowly a round papule arises, with a smooth, dull, pinkish surface, which becomes covered with minute yellowish scales; in this form it somewhat resembles a papulosquamous syphilide. These papules are broad and flat—raised one-sixteenth of an inch or less above the surface. They are most commonly situated on the neck, close to the hairy scalp; about the chin; the folds of the axillæ; the back and chest; and in females under the breast; both aspects of the arms; about the pubis, scrotum, thighs and legs.

* Nicholls' Report, pp. 285-289.

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They are not usually numerous, and soon begin to involute, passing through the glazed, wrinkled stage already noted, and likewise followed by a persistent black stain. But, instead of resolving, the papules may take on the appearance of a typical yaw granuloma. Small papules may also appear, singles or in groups, crowned with yellowish tops, without apparently passing through the maculo-squamous stage. They may persist for a long time without further development. In fact, the whole of the early eruption may consist of these abortive papules, scattered widely over the body.

In these modified cases, the patient may, in a month or less, be free from all visible lesions, save the black staining, and be then discharged from hospital.

9. In the course of time, sometimes several months after, the patient returns to hospital with a relapse. The immediate cause of his return is usually a recrudescence of the penis sores, or a sore mouth. A noticeable symptom of yaws is this recurrence of the primary sore—differentiating it from syphilis. It rarely, however, assumes the extent of the first lesion, and is more “yaw-like.” Two features characterise the condition of relapse, namely, the granulomatous type of the eruption and the tendency to implication of the mouth.

In a typical case, the body is covered with a scattered eruption of rounded, smaller, hemispherical, or larger, broad, elevated, flattened tubercles or granulomata, of all sizes up to an inch or more across, and capped with a crust of yellow secretion. Yaws may form on any part of the body; the commonest sites, however, are the forehead, about the *alæ nasi* and nostrils, the eyelids, the lips, around the mouth, and especially at the angles, chin, neck, shoulders, axillary folds and *axillæ*, forearms, trunk, anus, pubis, scrotum, and body of penis, external female genitals, legs and ankles.

10. The mouth lesions are characteristic. A horse-shoe shaped, raised, yellow-encrusted yaw may encircle both angles of the mouth, and two, three, or more confluent yellow-capped yaws may cover the mucous membrane of the inside of the lips; the buccal part is often attacked, and a triangular patch of confluent papules may cover the area in contact with the teeth. The nostrils may be blocked by granulomata, and the external auditory meatus likewise be filled up. The tongue may exhibit one or a row of yaws along its edge or on the *frænum*, and I have seen yaws on the palate and tonsils. When situated on the mucous membrane of the lips and mouth, yaws are modified in appearance, sometimes resembling the syphilitic mucous patch; sometimes raised, and of a whitish, ground glass appearance, as if covered with a layer of whitish epithelium; sometimes raised with a yellow cap of secretion. But being always moistened by saliva, the secretion is continually washed away, and ulceration and fissures—very painful—may occur.

The junction of the mucous membrane and skin is a favourite position for yaws, *e.g.*, the eyelids, nose, lips, anus, penis, and vulva. Now, in the Fijian variety the occurrence of granulomata on the mucous membranes seems thus to be common. This is contrary to the West Indian experience. Dr. Nicholls* says they only occur in "rare instances"; and of the occurrence at the junction of skin and mucous membrane he adduces statistics pointing out that the per centage was only 2·7 in 882 cases.

11. Yaws are usually discrete; but if originating close together coalescence may take place and they may become large, irregular, lobed, and fissured from drying up of secretion, or they may form irregular yaw patches covering the whole area of skin of one part of the body, such as the forehead, cheek, ankles, and wrists. At other times they form rings enclosing healthy skin, and these may spread at the periphery, like ringworm. In some cases the type of the yaw irruption is decidedly annular, especially on the upper half of the body. When situated on the scrotum and axillæ, where the surface is kept moist by perspiration, the yaw becomes flattened, pinkish-yellow, and sometimes almost condylomatous. If placed between the toes of people who wear boots the yaw is soft, ragged, and very painful. Finally, as the yaw involutes, the crust falls off and leaves a black stain, corresponding in size to the original yaw, lasting for months. Ulceration at the site of the yaw is rare, and only seen in cachectic subjects.

12. Later manifestations of the disease are condylomata of the anus, onychia, and granulomata of the soles of the feet. Condylomata ani are itchy and painful. When a yaw forms about the nail, rising from the matrix of the finger or toe-nail, it curls up round the sides, perhaps ulcerates, and forms a fungating, painful tumour, which may destroy or else disfigure the nail. The dried secretion may look almost rupial. In bad cases almost every nail may be affected, though the fingers are more often attacked than the toes. In yaws the nail itself is not affected as in syphilis; the onychia is really the growth of a yaw from the nail matrix, subsequently the nail may become injured by the yaw growth.

A still later lesion is the painful granuloma growing under the thick skin of the soles of the feet, and sometimes on the palms of the hands, known in Fiji as the "soki" or "sucuvi" (suthuvi), and in the West Indies as "tubboes" or "crabs." It is usually seen only late in the disease, and may occur years after all other manifestations of the disease have vanished. I have known them recur on Fijians 20 years or more after the original disease. Dr. Nicholls,† however, says he has "frequently met with cases in which the tubboe has been the earliest or even the only manifestation of the disease." The yaw, in its endeavour to break

* Nicholls' Report, p. 292.

† Nicholls' Report, p. 290.

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through the thick sole skin, causes acute pain. When through, it forms a papilomatous tumour, raised well above the surface, surrounded by a sharp collar of the thick horny skin, and secreting a musty, fœtid, moist secretion from the base of the sulcus. If the skin be pared off before the granuloma breaks through, a cavity, filled with a white, cheesy, fœtid material, the macerated epithelial cells, will be found between the yaw and epidermis.

A hypertrophic dermatitis may affect the palms and soles in the late stage. The cuticle becomes thickened, hard, and brittle; it cracks transversely, and deep fissures may form along the natural flexures; it desquamates or comes off in ragged, irregular flakes, or it may present a honey-combed appearance. In a couple of instances the palm of the hand presented the look of a large involuting yaw, covering the whole surface. The surface was moist and granular, like dried-up yaw secretion, and the skin was thickened, cracked, and desquamating. The Fijian name for this condition is "kakaca" (kakatha).*

13. Indians rarely complain of any symptoms during incubation. Pains in the leg bones, especially at night, myalgia, furred tongue, and malaise may occur during the course of the eruption. In some cases nocturnal tibial pains, pains in joints, anæmia, and even marked cachexia, are common. Children are prone to diarrhœa. Itching of the skin is common. Laryngitis was noted occasionally. Congestion of the fauces may be seen. The latter throat ulceration is painful.

14. The duration of yaws is variable. Some cases get well in a month or six weeks' time; they are the exception. More often the period is six months or longer (including relapses). It may, however, last a couple of years. Isolated "sucuvi" or "tubboes" may crop up, two, three, four, or more years after the patient seems cured. Fijian adults are very subject to them. Here are a few Indian examples: Lalbahadur, first admission for yaws, November, 1894, re-admitted for "sucuvi," February, 1897; Diljharia, female, yaws, December, 1895, "sucuvi," February, 1897; Daltu, yaws, October, 1894, "sucuvi," February, 1897; Thakur, yaws, March, 1896, "sucuvi," January, 1898; Chattia, a boy, yaws, October, 1894, "sucuvi," February, 1897. Anpach, 1892-1898.

15. Relapses are very common and depend upon the relinquishment of treatment at too early a period. These Indians, being indentured labourers, cannot well be detained in hospital after the disappearance of active symptoms. I have compiled a rough list of the number of relapses observed in the Labasa plantation

* When the thickened, cracked skin comes away, a soft, shining, pink patch of new skin is left.

hospitals. The list is imperfect, as some of the records could not be obtained. It embraces the years 1892-1898:—

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Number of cases with no relapses	123
" " " " 1 "	58
" " " " 2 "	24
" " " " 3 "	12
" " " " 4 "	4
" " " " 5 "	4
" " " " 6 "	1

Re-admission for "sueuvi" or tobboes are included in this list Dr. Orgias,* in Dr. Nicholls' Report, observes that relapses occur most frequently amongst East Indians at St. Lucia.

16. As a rule women appear to suffer less from yaws than men; the eruption is not so intense, although the most extensive rash I have ever seen was in a woman. It disappears more quickly under treatment, and relapses are less common.

On the plantations children do not often contract the disease owing to the rapid isolation of adults and the peculiar method of propagation observed amongst them. The children of "free" Indians, not living on a plantation, however, contract the disease freely. When seen, they are usually covered with a typical eruption and, as they can be detained for treatment for an indefinite period, relapses or sequelæ are very uncommon. Onychia and dermatitis are rare.

17. Do tertiary symptoms follow yaws? This is a vexed question. The native races affected by yaws are also subject to strumous disease and syphilis, and it is difficult to decide whether certain sequelæ are the result of the yaws or the tubercular or syphilitic taints. Writers on the subject are divided. Dr. Alfred Nicholls maintains that tertiary symptoms never follow yaws: that such are manifestations of tuberculosis. He concludes† "that the concurrence of the two diseases lead to the "formation of anomalous symptoms that are liable to give rise to "errors in diagnosis," and "that the condition of the disease "produced is of an aggravated type and relapsing nature." On the other hand, Dr. Numa Rat,‡ also a West Indian writer, says, "Destructive ulceration of the nares, pharynx, and soft palate is "one of the later manifestations of yaws." Dr. Prout,§ speaking of African yaws, says, "Destructive ulceration of the throat and "nasal bones may occur, but is rare, and then only in long standing cases," and that this only occurs in individuals "debilitated from any cause, such as improper food and bad treatment, "or in strumous constitutions."

Fijian natives, amongst whom syphilis is unknown (and therefore may be excluded), but tubercular diseases common, suffer

* Nicholls' Report, p. 248.

† Report, p. 225.

‡ Yaws: Its nature and treatment.

§ Davidson's Hygiene and Diseases of Warm Climates, p. 515.

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from certain lupoid diseases of the palate, naso-pharynx and larynx, accompanied by extensive destructive ulceration, called "kana e loma"; from lupoid ulceration of the skin of the face, nose, forearms, trunk, &c., from chronic spreading ulcers of the extremities, called "vidikoso"; from osteal nodes, and osteal caries; and from rheumatic pains. All these are rapidly influenced by iodine of potassium, which rather opposes the tubercular origin. Every native has had yaws in childhood, and the question arises, Are they tertiary manifestations of yaws, or are they scrofulous? The Hon. B. G. Corney, Chief Medical Officer of the Colony, who has had an unrivalled experience of native diseases, writes in the Report on the decrease of the native population, Section 465, as follows:—"An idea of the serious nature of yaws may be obtained from observations of its behaviour when acquired by an adult white man. Such cases have been numerous enough in Fiji to impress the European residents with dread and disgust. In the majority of such instances the disease has permanently shattered the health of the persons attacked, its tertiary effects simulating those of neglected syphilis; for, while often no less severe, they may prove almost as in-eradicable. They are manifested by lasting impairment of the nutritive functions, emaciation, inflammation of bones or joints, intractable ulcerations, and marked constitutional weakness." And again, Section 531:—"Yaws (coko) occurring in children of tubercular parents is probably intensified in its severity, and children who have been weakened by a prolonged attack of it are the more prone to die of some form of tuberculosis. Adults who bear marks of severe yaws in childhood are more liable to contract some form of tuberculosis in after life." In the preceding sections he enumerates the various forms of lupoid ulcerations I have already mentioned, but considers them tubercular. Dr. Daniels,* who has had experience of both the Fijian and American diseases, considers these lupoid ulcerations to be true sequelæ of yaws. I have not had sufficiently long experience of yaws in Indians—only six years—to have had an opportunity of seeing long-standing cases. Yet within the last year three such cases of lupoid ulceration, two in the throat and one on the legs, have passed through the hospital. None of the three had any external strumous signs; in none was a history of previous syphilis elicited; but all three were greatly debilitated by the attack, and one died. I append brief notes of these cases:—

1. Gulzari, aged about 26, first admitted to hospital on July 13th, 1897, with large fungating ulcer of penis, one inch long, and phimosis; circumcised; sore throat; August 20th, a maculo-squamous eruption; did not form granulomata. Discharged October 12th; readmitted November 9th, 1897. The sore on penis had broken down again, and he had a general eruption of typical yaws; anæmic; November 24th, cachectic; yaw on hard

* Manson, Tropical Diseases, p. 430.

palate; yaws involuting; December 14th, yaws confined to face; January 6th, 1898, a fresh and abundant crop of yaws coming out, especially over scalp (a rare instance), nose, eyelids, mouth, and axillæ; February 3rd, yaws all gone; February 16th, R. tonsil ulcerated, condition much improved; March 18th, yaws on mucous membrane of lips, both tonsils still ulcerated, laryngitis, yaw eruption has almost left body. Discharged April, 1898. Meantime he became a "free man." In November returned for treatment; anæmic, pain and tenderness over tibiæ, lupoid ulceration of palate and pharynx, dysphonia; November 25th, temperature 100·4, pulse 96, paresis of right arm and leg, reflexes normal, throat healing, headache; November 28th, complete hemiplegia of right side, aphasia, patellar reflex exaggerated, ankle clonus; improved during next few days, and power of speech returned; December 7th, became comatose, muscular tremors, remained in this condition till the 12th, when he died. As I was away from my district at time of death, no autopsy was made, unfortunately.

2. Jangha, aged about 30, May 2nd, 1898, ring of raised narrow ulceration half round sulcus penis; May 18th, general raised eruption, like urticaria; May 23rd, well-marked flat papular stage, *e.g.*, ulcer pillar right fauces, rash aborting, anæmic; June 6th, pains right side neck, over trachœa and knees at night; June 23rd, eruption mixed, involuting, dark, glazed, wrinkled, over limbs and neck, patches of desquamation, flattened yaws nearly gone; black stained maculæ abundant over body, palms, soles, throat healed, rheumatic pains; July , anæmic, eruption scaly, penis again ulcerated; August 1st, staining all gone, but patches of shining scaly skin remain on limbs, and especially on sides and soles of feet; August 25th, clearing up; September 10th, laryngitis, encircling sore of glans penis and foreskin, cachectic; November 21st, throat again ulcerated, and fresh yaw eruption coming out; December 8th, discharged; January 4th, 1899, readmitted, with abscess in ischio-rectal fossa, and lupoid ulceration of palate; 18th, both sides of palate show lupoid ulceration, yaws on upper lip, numerous small scaly patches legs and ankles, and black stains, cachectic. Still under observation. His wife, Basantia, had also yaws, some on genitalia.

3. Ratoa, aged about 20, two months in hospital with yaws, July-August, 1894, and again in October 1894. In June, 1897, three years later, readmitted for large irregular ulceration of soles of feet and "sucuvi"; cured July 22nd; readmitted August 20th, 1897, ulcers had broken down again, exuding a thin ichorous discharge; in October a bullous eruption appeared round one of the ulcers, then broke down leaving fresh ulcerated surfaces; henceforth would heal up, but immediately break down again: in January, 1898, skin of right leg, from knee downwards, broke down, forming a series of irregular ulcers, alternately healing and breaking down all through 1898; meantime cachexia set in; August 1898, a fresh crop of granulomata appeared on back

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and shoulders; September, sole ulcers completely healed and in October the leg healed, having a good deal of pigmentation, but little scarring. Discharged. December, 1898, readmitted, leg ulcers having broken down, and is still under treatment.

18. From the above description of the earlier stages of yaw evolution, the macular, squamous, papular, and squamo-papular eruptions may readily be confounded with syphilides. The resemblance is closer in the involution stages, and this, combined with the primary chancre, may lead to a mistaken diagnosis of syphilis. When once, however, the typical granuloma appears, the doubt vanishes. At some stages of the eruption, especially when mixed, the appearance approximates closely to a syphilide, and if seen only at that time, the observer might be pardoned for saying it was a case of syphilis. Certain of the later manifestations, the condylomata, the onychia, and the scaly dermatitis of palms and soles resemble syphilis. Although superficial resemblances may thus exist between the two diseases, the contrasts between them are so marked that the two diseases should never be confounded.

A medical man, a University professor, who favoured Hutchinson's theory of the similarity of the two diseases, while on a visit to Fiji, suggested to me, in conversation, that a table, drawn up comparing them, would be useful; and, as their course and symptoms lend themselves to such a comparison, I have roughly put together the following scheme:—

Yaws.	Syphilis.
<i>Incubation</i> —10 days to 6 weeks.	About 25 days.
<i>Primary sore</i> —None; or a yaw at site of inoculation; or infiltration, if that site be a sore. Secondary incubation?	<i>Primary sore</i> —A characteristic chancre. Secondary incubation—5-7 weeks.
<i>Secondary Symptoms</i> — Eruption: erythematous (macular) squamous, papular, ending in a granuloma or yaw, chiefly on face, neck, trunk, extremities (extensor and flexor aspects), genitalia. Mucous membrane: yaws or papules on lips, mouth and tongue. Junction of skin and mucous membrane, yaw common. Tonsillar ulceration, not common. No loss of hair. Pains in bones, but no periostitis. Eruption itchy. Deep pigmentation left. No iritis. Adenitis uncommon.	<i>Secondary Symptoms</i> — Eruption: roseolar, squamous, papular, vesicular <i>not</i> ending in a granuloma, chiefly on neck, chest, abdomen, flexor aspect forearms. Mucous membrane: Shallow ulcers or mucous patches, lips and tongue. Junction of skin and mucous membrane, no lesion. Tonsillar ulceration, common. Loss of hair. Pains in bones and periostitis. Not itchy. No pigmentation? Iritis. Adenitis common.

Yaws.	Syphilis.
<i>Later Secondary Stage—</i> Granulomata of feet (sucuvi, tubboes). Hypertrophic dermatitis of palms and soles. Relapsing chancres or "mother yaws" common, no rupia. No lesions of testes. None (?) [*]	<i>Later Secondary Stage—</i> None. Palmar psoriasis. Relapsing chancres rare Rupia. Sarcocoele. Cellular infiltration of arteries and viscera.
<i>Tertiary Stage?—</i> None. ? Periostial nodes. ? Lupoid ulceration. None. None.	<i>Tertiary Stage—</i> Gummata. Periostitis. Sespigmous and lupoid ulceration. Eye lesions. Nerve lesions.
<i>Not hereditary or congenital—</i> None. A tropical disease. Chiefly affects children. ? A micrococcus.	<i>Hereditary or congenital—</i> Tendency to cause miscarriage. A general disease. Chiefly affects adults. No germ discovered.
<i>Relapses—Common.</i>	<i>Relapses—Rare, runs a definite course.†</i>

^{*} See case of Gulzari. Sec. 17.

† Hutchinson : Syphilis, p. 39.

19. The treatment may be summed up in the use of three drugs, iodine, mercury, and iron, in various preparations and combinations, according to the individual case. In ordinary cases I give liq. hydarg. perchlor. 1 drm., and potassium iodide, grains 5, gradually increased to grains 20-30, three times a day. If there is any anæmia or debility I omit the mercury and substitute iron and strychnine, although sometimes liq. hydarg. perchlor. and liq. ferri perchlor., and liq. strychninæ do as well. In the later stages mercury may be omitted. Donovan's solution is often very useful, gradually increased; or the iodides and phosphates of iron. Sometimes, indeed, iron and arsenic alone act as well as any other combination.

Some consider specific treatment in the early stages prone to produce relapses, and use diaphoretics to bring out the eruption. But this, to me, seems only to prolong the disease which it is one's object to cut short as soon as possible. Under specifics, especially the iodides, the rash quickly aborts, and relapses are due, I believe, wholly, at any rate largely, to the too early stoppage of treatment. The iodides and tonics should be administered for some months after the disappearance of all visible

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manifestations. And should any premonitory symptoms of relapse show themselves, a recourse to iodides should at once be had.

Local treatment I do not think to be of any use during the course of a general eruption of granulomata. Mouth and throat ulcerations should be treated on general principles.

If "sucuvi" or "soki" are scraped with a Volkmann's spoon and cauterized with acid nitrate of mercury a rapid cure is effected.

For the dermatitis, sometimes salicylic ointment, sometimes lin. potas. iodidi seems to benefit; but mostly time and specific treatment are the only remedies. Scraping is also a useful remedy for fungating sores and lupoid ulcerations.

As in all other debilitating diseases good food, healthy surroundings, fresh air, and moderate exercise are of the utmost importance.

20. I shall add brief notes of some cases illustrative of the description of the disease as given above:—

(1.) Illustrating recurrence of chancres, or ulcers of penis:

Gouri, admitted November 5th, 1897, with large fungating ulcers behind sulcus penis; circumcised; discharged December 8th, ulcer healed; no eruption; readmitted January 7th, 1898, with (a) yellowish ulcers at sulcus penis, and (b) raised red ulcer around meatus urethræ, (c) a chain of minute herpetic vesicles; a macular, scaly, glazed rash on arms and neck; no lesions of throat or mouth. In two weeks ulcers healed and rash gone. Readmitted March 10th, 1898, with large, hard, raised granuloma on sulcus penis; ulcer on each tonsil; rash on trunk, and large, round, annular, shining eruption on arms and hands, both aspects; March 18th, yaws lower lip, rash gone, penis healed; April 5th, well; May 5th, yaws on lips, upper and lower, frænum of tongue and left axilla; all healed on 17th; June 19th, yaw eruption, chiefly on face; large, annular, left axilla, July 19th; October 6th, 1898, recurrence of yaws on nose and lips; well; October 23rd, discharged.

His wife, Gungadi, had also a mild attack of yaws.

(2.) and (3.) Husband and wife. Husband, mother, yaw, ankle; wife, vulva.

(2.) Pudai, May 7th, 1897, mother yaw, dorsum of right foot; June 3rd, general yaws eruption, not numerous; June 16th, aborting, complains pains in legs and ankle joints; July 27th, rash all gone. Readmitted September 6th, 1897, with recurrence of mother yaw dorsum of foot, and several yaws on body, limbs and penis; September 29th, all gone, well. Readmitted January 24th, 1898, papular eruption face and trunk; "sucuvi" feet; well by the 6th March, and discharged.

(3.) Sidhani, wife of Pudai, marked hypertrophic dermatitis. Admitted August 30th, 1897, with large mother yaw on labia, and smaller yaws on fourchette, large crop of yaws trunk and limbs; September 27th, rash aborting, vulva healed; October 7th, well. Readmitted November 10th, with a general eruption of large, flat, yellow tubercles in various stages, skin peeling off hands, no eruption genitals; December 7th, eruption all gone; December 13th, fresh eruption on legs; January 26th, 1898, yaws, broad, flat, partly scaly on skin and legs; February 12th, 1898, fresh, copious eruption of broad, flat yaws on back; February 28th, yaws covered with squamous desquamation, very like psoriasis; April, patches fading; April 25th, large eruption of annular yaws, up to size of crown, with dark staining in interiors on back-like ringworm; May 5th, dermatitis soles; 10th, deep fissures; May 28th, still scaly soles, not painful; June 6th, well; July 4th, fresh eruption, leaving large patches of dark staining trunk and limbs; September 8th, dermatitis, with fissures soles and palms; October 15th, well; January 16th, 1899, yaws on lips, scaly papules on sides of body, marked dermatitis palms and soles. Still under treatment.

(4.) Persistent eruption, with dermatitis of palms:

Eulabia, female, admitted April 25th, 1898, with an abundant typical eruption of yaws over trunk and limbs. Says first sore (mother yaw) was under chin. May 11th, eruption beginning to decrease; June to August, eruption at a standstill; September 12th, a few abortive spots remain only; September 26th, large yaws on feet; December , only scaly papules left; December 19th, made an out-patient. Readmitted January 16th, with large masses of yaws about ankles, legs, arms, and dermatitis of both palms. Still under treatment.

(5.) Extremely abundant eruptions, with profuse desquamation:

Anopia, female, admitted June 23rd, 1898, with papulo-pustular rash over neck, armpits, chest, back and arms, covered with thick, yellowish scabs; also large crop over genitals. In one month completely disappeared, leaving deep staining. August 6th, enormous crop of confluent, annular yaws on legs, genitals, and anus; but few on face, trunk or arms, very itchy; August 20th, rapidly fading, leaving black staining; September 8th, only two symmetrical masses of yaws on internal ankles, also some on genitals; September 26th, skin very rough and scaly between pigment patches, no scales on maculae, eruption starting round mouth; well, October 17th. Readmitted November 2nd, 1898, very profuse eruption of itchy, broad yaws; also at angles of mouth, and on buccal mucous membrane; December 12th, fresh crop trunk, gums, buccal mucous membrane, tongue ulcerated on edges, and two yaws on dorsum tongue; January, 1899, onychia on all fingers; January 25th, eruption still abundant, abdomen and legs, mouth, mucous membrane many yaws. Under treatment.

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(6.) Squamous eruption, in debilitated subject—onychia, &c. :
Munia, female, November 15th, 1897, anæmic, maculo-papular, eruptive, trunk and arms; November 22nd, rash papular, several granulomata, three or four on labia majora; December 3rd, rash gone, dark staining; December 14th, distinct, raised, dusky eruption, broad and round, on arms and legs; December 23rd, more raised; December 29th, still more raised, squamous, dark; January 2nd, more scaly; January 24th, very like psoriasis, copious, trunk, legs, both aspects of arms; February 1st, haziness cornea O.S.; February 17th, rash gone, black stains. Readmitted May 16th, 1898, annular yaw, eruptive shoulders, breast, upper limbs, hands, broad turbercles on vulva, lips ulcerated, deep staining of first eruption still over body, condyloma ani, rheumatic pains joints; May 30th, eruption all gone, except yaws on feet; June 7th, ulcer cornea, O.S., conjunctival injection; June 27th, serpiginous ulcer and corneal haze, anæmic; July 30th, ulcer healed, yaws on lips; August 8th, onychia; August 23rd, relapse, yaws about mouth and nails; December, 1898, onychia of fingers still troublesome.

(7.) Abortive eruption, no recurrence :

Tilia, female, October 7th, 1897, raised, dark macular eruption, best seen at a distance, over body and limbs, fauces congested, whole left labia one mass of yaw granulomata, also yaws nymphæ; October 13th, vulvar eruption increasing, on pubis, yaw encircling posterior fourchette, eruption become papular on body; October 20th, eruption mostly gone, a few papules left only; October 29th, only black staining sites of papules.

(8.) Large mother yaw on back, abortive eruption :

Hira, April 9th, 1897, large yaw, three inches across, one and a half inches wide, irregular, formed by coalescence of smaller yaws, on back. One month before received small wound from barbed wire at spot. A few yaws limbs; by middle of May mother yaw healed and eruption gone. No relapse.

(9.) Mother yaw penis, no eruption; "sucuvís" a year later :

Ganpat, November 1st, 1897, ulcers of penis, phimosis, no bubo, no eruption, throat normal; lasted eight weeks. Readmitted September 15th, 1898, with "sucuvís" of feet. Wife also had yaws.

(10.) Fresh (second) infection ?

Jagessar Singh, had yaws, a severe attack, from February, 1896, to September, 1896. On June 24th, 1898, he was readmitted to hospital with a large yaw on sulcus penis, with a considerable thickening of tissues. This healed in a month; no relapse, no eruption.

(11.) Inoculation on penis, abortive eruption, "sucuvís" :

Mohura Lal, primary sore penis, May 19th, 1897; June 18th, abortive yaw eruption. Discharged July 13th, 1897. Sucuvís,

December 20th, 1897, also two patches of dermatitis soles of feet. Cured January 15th, 1898.

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(12.) Yaws penis, marked joint pains, persistent face eruption :

Somai, November 15th, 1897, large yaw sore sulcus penis, extending half round glans phimosi, no eruption; January 1st, small anal condyloma. Discharged January 19th, 1898, well. Readmitted February 9th, 1898, for pains in knees, ankles, and wrists, a few small yaws on chin and cheeks; March 1st, abundant yaw eruption; April , yaws confined to neck and face, throat sores; May, laryngitis, still pains in bones of legs, yaws round neck, eyes, nose, and chin, dark staining; June, large yaws over face and neck, as before, and large yaw axilla; July, yaws, like rupia, about face, laryngitis; August, eruption going away, yaws angles of eyes and lips, pains across chest; September, well.

(13) (14) and (15.) Mother and two children; former contracted yaws from suckling her baby; mother yaw on nipple.

Two children, one infant suckling, only a few yaws each, chiefly mouth and anus; in hospital from August, 1896, to March, 1897. Mother contracted yaw on nipple October, 1896, anæmic, pains knees, legs, and ankles, only a few granulomata forehead and elbow; well, March, 1897.

(16) (17) and (18.) Woman infecting two men cohabiting with her :

Patia, female, February, 1897, yaws on genitalia, slight eruption; July, yaws reappeared on genitalia; well, August, 1897.

Sital, husband, February, 1897, yaw ulceration penis, circumcised, abundant and severe eruption. In hospital seven and a half months.

Tega, February 23rd, 1897, with two large yaws on foreskin; cohabiting with Patia; says yaws came three weeks before; nature of eruption not mentioned in notes. Well, April 22nd, no relapse.

(19) and (20.) Man infecting wife; both mild :

Singha, hospital February 22nd, 1897, says first yaw (mother yaw) came on neck six weeks before; has black stain on neck, also stain chest; has yaws on penis, scrotum, anus, and left axilla; phimosi. Well, April.

Anupa, wife, hospital March 22nd, 1897, with four yaws on labia majora, and one on nympha, none on rest of body; yaws gone, April 21st 1897. No relapse.

(21) and (22.) Wife infecting husband :

Mohania, March 22nd, 1897, with two large yaws and some smaller ones on vulva, a few yaws body and arms, vulvar yaws increasing in size, and mucous membrane between them becoming infiltrated with yaw material; healed April 24th, and

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discharged. Readmitted August 2nd, 1897, with many yaws round vulva, very itchy; October, 1897, labial yaws recurred, and condyloma ani; November, well.

Matabadal, husband, admitted May 7th, 1897, with yaw on penis; June, general eruption; June 18th, yaws aborting, black maculæ, penis yaw nearly gone, skin dry, rough, cracking in patches over back and limbs; July 22nd, discharged, well.

(23.) Child with mixed eruption, pustules:

Sumara, male, about two or three years old, admitted February 25th, 1898, with mixed eruption; copious (1) erythematous macular, eruption on trunk and limbs; (2) papules trunk; (3) pustules, irregular, oval, round, various sizes, trunk and limbs; (4) numerous herpes-like spots about face, chin, cheeks, forehead, angles mouth ulcerated, had eruption two weeks before admission; March 2nd, spots all developing more or less into flat-topped papules, very yaw-like; 14th, eruption aborting; April 10th, eruption of granulomata; May 18th, nearly gone, only remains on buttocks; June 19th, pustular eruption forehead, much staining trunk and limbs, rhinitis, conjunctivitis; discharged July 4th, 1898. Readmitted September 21st, with a general eruption of yaws over body. Cured November 30th, 1898. His mother was treated for yaws about July, 1896.

(24) (25) and (26.) Woman infecting two men cohabiting with her; troublesome onychia in two cases:

(24.) Sheorania, admitted March 1st, 1898, with yaw papules on vulva, and lips, right tonsil ulcerated, eruption, dark, erythematous papular over body; March 21st, yaw eruption gone. Readmitted May 2nd, with yaws on lips, and paronychia; June, onychia of three fingers and thumb; "sucuvivis" feet; onychia healed about end of July. Readmitted September 12th, 1898, with yaws about mouth and lips. Discharged September 21st. On October 11th readmitted. Note reads "yaw on index finger right hand, yaws on labia, numerous black macular stains on trunk and limbs, improving." Readmitted December 19th, 1898, with yaws about mouth, and onychia. Under treatment.

(25.) Bahori, first "husband," admitted March 21st, 1898, with raised ulcer behind glans penis, and two smaller superficial ones on glans; March 30th, ulcers healed, discharged. June 20th, readmitted for dysentery; had yaw on palate, several on lips, buccal membrane, chin, and hand; July 25th, yaw under toe right foot; August 22nd, healed, and discharged. September 13th, 1898, yaw on nose, chin, and scrotum; September 26th, onychia; October 10th, dermatitis palms, onychia of thumb becoming a nasty sore, nail avulsed; October 31st, lip yaws appearing again; November 8th, discharged.

(26.) Sinraj, second "husband" of Sheorania, first being in hospital, admitted October 11th, 1898, for hard thickened ulcer at the sulcus glandis penis; the ulcer ulcerated deeply, and was

surrounded with much thickening of tissues; November 28th, complains sore throat, throat congested, eruption of broad subcutaneous papules over trunk, which quickly aborted; December 19th, yaws on mucous membrane of mouth, on chin, neck, and trunk, throat congested; January 3rd, yaws on tongue. Under treatment still.

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Note.—When first man, Bahori, was inoculated on penis woman had yaws on vulva in March; when second man, Sinraj, was inoculated she was readmitted in hospital, October, with a recurrence of yaws on vulva.

21. Some medical men still maintain that yaws and syphilis are the same disease, and, inasmuch as syphilis is common amongst Hindoos generally, and as the description of yaws given here has points in common with syphilis, *e.g.*, early eruption, mouth sores, condylomata, onychia, &c., a reader of this paper may say I have confounded the two diseases. Proof of the distinctiveness of the two would, of course, be made certain if yaws occurred in a subject who had syphilis formerly, or *vicē versā*. Such subjects are rare here, for the reasons that syphilis is very uncommon, except in the inherited form, at Labasa; that it is not easy to detect signs of previous syphilis, if it were mild, in Indian coolies by inspection; and it is impossible to obtain a history of it owing to their suspicions and lying propensities. I have a few times suspected the co-existence of early syphilis and yaws, but as the treatment is practically the same in both diseases, and as syphilitic lesions disappear more quickly than yaws under specifics, I have never been positive. It so happens, however, that some of the women treated for yaws have had children with inherited syphilis, who, even before their mothers, contracted yaws: hence, these women must have had both, as, according to Mr. Hutchinson, second infections of syphilis are very rare, and if reinfection occurs, “the period since the first attack” is “very long.”*

I give some illustrations:—

(a.) Woman, Sidhani, case 3, given before in detail. Mother contracted yaws August, 1897; her infant, Gobinda, born April 12th, 1897, died of inherited syphilis August 1898; autopsy showed several gummata in right lung.

(b.) Sundaria, contracted yaws, August 1898; her infant, Ramkoodari, born November 30th, 1896, shortly after mother's arrival in Fiji, died of inherited syphilis November 1898; and autopsy likewise disclosed gummata in lungs.

(c.) Mulki, contracted yaws August, 1898; infant, Mahomed Khan, born November 24th, 1896, also shortly after her arrival from India, had undoubted congenital syphilis.

*Hutchinson: Syphilis, chap. XV.

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22. I here give a few notes of three cases of yaws occurring in Europeans. The three cases given below were strong, active men, in the prime of life, and yet all three suffered very severely, pointing to the fact that yaws is a more serious ailment in whites than in the darker races.

I would here note the occurrence in two of these cases of a symptom I have not met with in either Fijians or Indians, or, indeed, read of in any account of the disease, namely, the manifestation of peculiar subcutaneous soft nodules, which can be moved about for some little distance under the skin, or, as one of my patients told me, "it used to travel along" as much as an inch a day. Mistaking one such for an abscess I incised it, but only a little serum came away; nothing peculiar was seen; but, though opened under antiseptic precautions, &c., it would not heal, and continued to discharge a watery fluid for several months. None of these cases had previous syphilis.

(1.) The first case is taken from notes made by the patient himself, who was connected with the plantation hospital. Mr. B., age about 26; incubation either 10-14 days, or seven weeks. Primary sore, inoculation of an abrasion glans penis, followed by large indurated ulcer surrounding corona; phimosis; circumcision; sore then healed up. In four to five weeks after inoculation one yaw appeared on back and one on arm; sore throat; later, several yaws came up on face and chest. His mouth becoming badly ulcerated I advised him to leave Fiji. He went to New Zealand, 12th week of the disease, the penis ulcer having broken down again; 14th week, yaws appeared under toes and sole of feet, the patch spread over the whole hollow of foot, and all toes became affected; during 24th week (six months), a second general eruption appeared over trunk and arms and scrotum, but especially over back, of broad yaws, encircled by pink, in size from a pea to a crown piece, itchy; also condyloma ani; the eruption lasted three weeks. No constitutional symptoms accompanied the attack or relapse, except local pain and discomfort from the sore throat, and various other manifestations. At 26th week he had a relapse of the sore throat; during 27th week the mouth mucous membrane was affected again; during 36th week, ulceration of sole of right foot; 40th week, relapse of condylomata ani. Patient returned to Fiji quite well in September, 1897, the beginning of the warm season. Since his return is liable to relapses of ulceration of mouth and lips; to yaws between toes and about anus, itchy and painful, which heal up and break down; this, for the last fifteen months. The duration of his attack is thus, so far, over two years.

(2.) Mr. R., planter, aged about 38, was living on a cocoanut plantation, surrounded by natives, contracted "coko" in April, 1893; probably inoculated by flies; spot where, not known. Yaws appeared first on scalp and forehead, then came out on face

and back of neck; eruption abundant and granulomatous, "face like a relief map"; no constitutional symptoms, but had headache and photophobia during period of eruption. As face eruption died away a few painful yaws appeared on hands, and feet became tender. Eruption lasted about six months; no medicinal treatment. Six months later a second eruption broke out on neck and arms only. Came under my treatment, but living at a great distance away, carried on treatment merely spasmodically; when he took the iodides eruption would die away, but relapsed when treatment was relinquished. The yaws were but few in number; he had some very persistent and painful yaw masses on right shoulder and sides of neck, which ulcerated and left scars. About same time, 1896-97, a soft subcutaneous nodule, moveable by finger, formed over right jaw, feeling like a cyst. I incised it, but only some serum came away, and it did not heal for several months, leaving a nasty scar. About the middle of 1897 eruption completely disappeared. Since then he is subject to rheumatic pains, often severe and crippling, in neck and shoulder, and rapidly relieved by potassium iodide: eruption not itchy, no mouth eruptions, disease aggravated whenever a strong trade-wind blows. Duration of illness, four years; after effects still continue.

(3.) Mr. E., aged 28-30, planter in a native district, inoculated on abrasion back of hand; abrasion did not heal, and a week later began to form a "mother yaw." In three to four weeks eruption appeared, numerous tiny yellow-topped papules, gradually growing into typical yaw granulomata, on forehead, under eye, chin, and lips, palms of hand, under toes, flexor aspect forearms, buttocks, round anus, penis, and scrotum; none on trunk. Five months after contracting coko left Fiji for England, *viâ* Cape Horn. When ten days at sea all symptoms gone; but before England was reached (re-entering the tropics) eruption relapsed over lips, chin, and eyes, "nowhere else," and again quickly healed. During English winter patient's health was "splendid," but when summer approached pain returned to legs, and three subcutaneous, soft, semifluid nodules formed under scalp, and "kept travelling about under scalp, moving as much as an inch on some days." Feet also were tender. Left England for Fiji, *viâ* the Cape of Good Hope, in September. When two weeks out at sea all symptoms vanished. Reaching New Zealand in the warm weather got very severe laryngitis with aphonia; thinks one of the nodules mentioned above formed in his throat. His voice is quite husky to present day. Reached Fiji in December (the hot season) perfectly well, but immediately suffered a relapse, and had to go to hospital. The subcutaneous nodules reappeared on scalp, forehead, under eye, left shoulder, over right ribs, right leg, and ankle; broke down, and formed deep, painful, indolent ulcers, lasting several weeks. Two years later chronic dacryocystitis. Constitutional symptoms, none at first: during eruption if southerly wind blew, yaws pained so much that he could

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not sleep; during period of later eruption (fourth month) suffered much from severe pains legs from knees down. These pains recurred during relapse on return to Fiji. Enjoyed good health all through. Duration of disease nearly two years.

23. I may here mention that the Fijian natives distinguish two varieties of yaws, a wet and a dry. The wet is characterized by running sores, and is much the more severe form. They also believe that a relapse occurs in every case, though the second attack may consist of only a few yaws, and be very mild.

APPENDIX.

Photographs shewing :—

- (1.) General distribution of an ordinary eruption of yaws.
 - (2.) Annular type of eruption : involution and staining.
 - (3.) Onychia and yaws about angles of mouth.
 - (4.) Primary yaws of vulva : on nymphæ, and præputium clitoridis.
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APPENDIX IV.

Fiji,
1898.REPORT ON FIVE CASES OF POISONING BY DATURA
STRAMONIUM (LINN.).*By the Resident Medical Superintendent of the Colonial Hospital.*

The following is a Report of five cases of poisoning that were recently treated here:—

2. The first three patients, husband and wife and a male friend, are Indian immigrants. They were in their house one evening at about 9 p.m.; they then ate some cakes given to them by another Indian. They stated that within half an hour they had all become unconscious, and remembered nothing more until they found themselves in hospital on the evening of the next day, on the morning of which they had been found by the police and brought to the police station.

3. There, one-fifteenth of a grain of apomorphine was administered to each of them hypodermically. Two vomited, the third did not.

4. They were then brought up to the hospital, and reached it just before noon, fifteen hours after the administration of the poison. Their condition on admission was as follows:—

The woman, Sukwaria, was carried in and placed on the floor. She remained there quite quietly, sitting up. She paid no attention to what was happening around her; but occasionally picked at the air, or at her clothing. Her pupils were extremely dilated. She resisted movement, but not violently. Two hours later she spoke rationally.

Her husband, Idu, lay with the eyes closed. At intervals of one or two minutes he had tetanic contractions in which the arms and legs were flexed, and the jaws clenched. His pulse was soft, full, regular, and not fast. The breathing was regular, deep, and at times snoring. He was unconscious, but could be aroused, and struggled when the stomach-tube was passed. The convulsions quickly ceased, and were followed by picking and catching at the air. The pupils were extremely dilated and did not react to light. There was for some time a tendency to become somnolent, with snoring respiration. In three hours he had recovered consciousness, and could walk up steps without stumbling, and answered questions rationally. He remembered nothing of what had occurred then; but the next day he gave a full account of what had happened previously to having been overcome by the poison. His pupils were dilated, but reacted to light, and his vision was good.

FIGI,
1898.

5. These two patients had vomited at the police station, but the other man, Nabibaks, had not, and his condition was more serious than that of the other two. His pupils were widely dilated and insensitive to light; the pulse was slow, full, and soft. He had quickly repeated convulsions in which the arms were bent, the fists clenched, and the body stiff. In the intervals there was much grasping at the air. He struggled violently while his stomach was being washed out. Afterwards he lay unconscious, with snoring breathing, but could be partly roused; and then he had more convulsions and grasping at the air. Two hours after admission his pulse became feeble, but quickly improved after hypodermic injection of ether. Twice he voided urine in the ward, voluntarily and deliberately, in the presence of the doctor and nurses, apparently quite unconscious that the action was indelicate or ill-timed. Three hours after admission he regained consciousness and staggered to his feet. His gait was very ataxic, and he appeared not to see objects intelligently. He tried to walk through a closed window, and then walked round the room, peering at objects and making ineffectual efforts to touch them, but was quite unable to judge their positions. He showed no signs of recognition towards his friends. He was led down some steps, but made no allowance for them, and had to be held up. For the rest of the day he was quiet, but quite irrational. The next day the pupils were still dilated, but reacted to light. The patient was quite sensible, but absolutely without memory for anything that had happened on the previous day.

6. A specimen of the cake that these people had been eating was brought up by the police. Portions of this were kept for twenty-four hours in absolute alcohol, acidulated with acetic acid. The resulting solution was filtered, and the alcohol boiled off the filtrate; the residue was then dissolved in water and neutralised. This solution applied to the eye caused extreme dilatation of the pupil. No characteristic seed was found in the cakes.

7. A month later two more cases were brought in to the hospital presenting similar symptoms, but less severe. The history was almost exactly the same, of having been given some cakes to eat by an Indian, and of having thereafter become unconscious. In both cases robbery was said to have been committed while the sufferers were unconscious. In this instance also, from cakes brought up by the police, there was prepared a watery extract causing marked dilatation of the pupil. No poison was found in the vomit ejected nine hours after administration.

8. There can, I think, be no doubt that the patients were suffering from poisoning by one of the *Atropaceæ*; but nothing in the symptoms, or the very incomplete analysis made, could help me to decide which it was.

9. The reasons for considering it to have been stramonium were that both in India, where the plant is known as "dhatura," and also among the Indian immigrants in this Colony, the plant and its stupefying influence are well known; and that many previous cases have occurred here in some of which stramonium seeds have been recognised in the dejecta. Again, stramonium is a common plant here, while neither belladonna nor hyoscyamus occurs at all.

FIGI,
1898.

AUBREY MONTAGUE, M.B.

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1899.

No. 6.

F I J I .

ANNUAL MEDICAL REPORT, 1899.

POPULATION.

1. The estimated population of the Colony at the end of the year amounted to 122,673 persons, and was made up of the following classes in the proportions mentioned:—

Classes.								No.
Europeans and other whites	...	...	...	...	...	...	...	4,373
Aboriginal Fijians	...	...	...	...	...	...	...	98,478
East Indian immigrants (including their children born in Fiji)								13,282
Melanesian and Malayo-Polynesian immigrants	...	...	...	...	...	...	...	1,961
Rotumans	...	...	...	...	...	...	...	2,171
Half-castes and other degrees	...	...	...	...	...	...	...	1,258
All others	...	...	...	...	...	...	...	1,150
Total								122,673

These figures represent an increase of 935 over the foregoing year's population, which was mainly due to the immigration of Indian coolies.

The decrease in the numbers of the aboriginal race was 476, a somewhat less number than in any previous year since the census of 1891.

*Births and Deaths.*FIJI,
1899.
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2. The total births registered numbered 4,191, an excess of 113 over those in the previous year. The deaths amounted to 4,319, as against 4,713 during 1898. Of arrivals in the Colony there were 1,684, and of departures from it, 698.

The birth-rate, calculated on the *mean* population for the year, was 34·29 per mille, and the death-rate, computed on the same basis, was 35·4 per mille.

The former figure was 1·8 above, and the latter 3·36 below, the corresponding results in the previous year.

Births, Deaths, and Marriages.

3. Some further particulars regarding the births, deaths, and marriages which occurred among the various racial denominations in the Colony are afforded in the following tabular statement, and have been obligingly furnished by the Registrar-General:—

—				Births.	Deaths.	Marriages.
Europeans...	...	...		64	26	27
Fijians	...	...	...	3,395	3,871	1,655
Indians	...	...	...	579	258	143
Polynesians	...	...		7	38	29
Rotumans...	...	...		108	104	30
Half-castes	...	...		32	16	12
Others	...	...	...	6	6	2
Total	...	...		4,191	4,319	1,898

There is no noteworthy difference between these figures and those relating to the year 1898.

4. The accompanying table (Return A) expresses information in a form convenient for comparison with the returns from other colonies, and is prepared in accordance with suggestions circulated in the Model Medical Report form.

Prevalence of Diseases.

5. The year proved remarkably free from epidemic diseases, but towards its close whooping-cough began to assert itself among

**Fiji,
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the native children. It is always a serious matter for them, and the majority are perforce out of reach of continuous medical treatment.

The usual seasonal outbreaks of naso-pharyngeal catarrh occurred about the periods of the autumnal and the vernal equinox.

Only two cases of enteric fever were recorded in the colonial population—one a European, and the other an Indian coolie living on his own land; but seven blue-jackets and an officer were received into the Colonial Hospital suffering from the tropical type of this disease, having acquired it at the seat of war in Samoa. One other case was admitted from a steamer just arrived from Vavau.

The monthly fluctuation in the number of admissions to the Colonial Hospital is given below, as affording some guide to the seasonal incidence of disease, but the above-mentioned enteric cases, together with six other sick and wounded seamen from Her Majesty's ships in Samoa, necessarily derange the evidence as it appears in the table, in so far as the months of June, July, and August are concerned, in regard to resident Europeans. And the influx of Fijians in January, May, and June was due to special pressure brought to bear upon the chronic invalids of his districts by the Provincial Inspector in Tailevu and Ra:—

Admissions to the Colonial Hospital.

Nationality.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Whole Year.
Europeans ...	7	5	7	7	5	12	8	7	3	2	3	4	70
Fijians...	119	71	75	66	107	104	64	57	46	59	59	58	885
Indians...	25	37	31	30	25	18	24	32	33	30	21	22	328
Melanesians ..	4	4	10	6	2	5	7	6	1	5	5	5	60
All others ...	3	1	7	1	3	1	4	2	6	3	1	6	38
Total ...	158	118	130	110	142	140	107	104	89	99	89	95	1,381

**Fiji,
1899.**

Fiji,
1899.

CHARACTER OF DISEASES TREATED IN THE COLONIAL HOSPITAL.

6. Of the 1,381 admissions to the Colonial Hospital, cases of general disease numbered 775, exceeding the local diseases by 187. The remarkable excess of the former was in large measure due to the number of cases of yaws treated, mostly in the tertiary stage in Fijians, but including some in the secondary stage among Indians. There were 385 such cases in all.

Only 22 cases of syphilis were received. They all occurred in Indian coolies, except one in a European, and were made up of 3 congenital, 1 primary, 7 secondary and 11 tertiary.

There were 60 cases of dysentery, but only 2 (both Indian coolies) of malarial fevers.

Of the 588 cases of local diseases 24 were classed under those of the nervous system, 91 the digestive system, 92 the respiratory, 43 the lymphatic (mostly filarial), 78 connective tissue (of which 72 were abscesses), and 139 skin (of which 124 were non-specific ulcers).

7. Details of the diseases treated, surgical operations performed, and an analysis of the causes of deaths in connection with the Colonial Hospital are, as usual, afforded in the Blue Book of Fiji for the year.

8. A table is next presented in which are shown the numbers of admissions of indentured Indian immigrants to estate hospitals, month by month through the year. It constitutes a summary of the Nosological Return (C) appended, in which the diseases, as well as the divisional headings, are specified. New coolies arrived from India about May and June, and these always tend to swell the lists (especially of ulcers) from August forwards, while becoming acclimatised.

Admissions of Indentured Indian Immigrants to Estate Hospitals.

Division.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Whole Year.
General Diseases ...	169	126	132	122	98	80	90	135	140	133	141	125	1,491
Local Diseases ...	381	328	325	254	255	258	232	310	333	390	408	298	3,772
General Injuries ...	—	—	—	11	2	2	5	6	9	18	7	9	69
Local Injuries ...	42	44	37	21	26	9	27	19	25	31	36	32	349
Other Conditions ...	2	—	—	1	—	1	—	2	—	—	1	—	7
Total	594	498	494	409	381	350	354	472	507	572	593	464	5,688

F131,
1899.

**Fiji,
1899.**

DISEASES AMONG INDIAN COOLIES.

9. Particulars of the diseases and deaths which occurred among indentured Indian coolies on sugar estates and other plantations in the various medical districts are furnished in the Nosological Return (C) already alluded to.

10. The relative mortality in different seasons presented no marked features.

METEOROLOGICAL CONDITIONS.

11. The meteorological condition of the islands, as represented by the observations officially taken and recorded at Suva, are expressed in the accompanying Return B. It should, however, be remembered that local deviations from this standard, as regards temperature and humidity, are very considerable. They depend upon elevation, aspect, and distance from the sea, the rainfall on the eastern or windward side of the larger islands of the group being greater and more evenly distributed as to season than on the western or leeward side.

The influence of the north-west monsoon which prevails in Eastern Malaysia, New Guinea waters, and the Solomon Islands during the summer months is distinctly felt in parts of the Fijian Archipelago in some years, generally at the end of January and in February.

At the Government Station at Nadarivatu, 2,700 feet above the sea, and twelve miles distant from it, it is usual to keep fires burning in the dwelling-houses after sunset all the year round, and a temperature as low as 43° has been recorded.

YAWS.

12. No noteworthy events occurred with regard to particular diseases recurring during the year, but yaws continued to make serious progress among the Indian coolies, more especially in the "free" population of that class, and to wreak its usual havoc in the native race. The connection between the tertiary consequences of yaws and the primary attack are usually so long deferred, and the general public knows so little of them, that the warnings given by the Medical Staff on this subject, and the efforts of individual medical officers to combat the extension of yaws among children, are apt to be undervalued by lay authorities.

The quantity of iodide of potassium used in the Colony during the year in the treatment of this disease alone was not less than two hundredweight; but its value is, of course, minimised unless its administration be supplemented by segregation of the cases from those not affected.

GENERAL SANITATION.

Fiji,
1899.

13. The general sanitation of the Colony did not materially differ from that in the foregoing year, but efforts to improve the condition of native villages in this respect were initiated by the appointment of four European Provincial Inspectors, one of whom was a medical man.

Several improvements were effected in the water supply of native villages ; and the scheme for conveying good water from a mountain stream to all the villages in the delta of the Rewa River was carried into effect and was in a fair way of completion.

Overcrowding does not exist in Fiji, but endeavours were made to improve the quality of the natives' dwelling-houses, and to better regulate the care of children and of pregnant and nursing women. Unfortunately the Fijian mothers and midwives are not merely grossly ignorant about such matters, but they are no less prejudiced and obstinate.

VACCINATION.

14. The total number of vaccinations performed was 1,653, of which 1,381 were returned as successful, 85 doubtful, 181 unsuccessful ; and in six cases the subjects were absent from inspection. Of the successful cases 1,194 were primary and 187 secondary vaccinations.

No arm-to-arm vaccination was done. A portion of the lymph was procured from the Jenner Institute at Battersea, and the remainder from New Zealand. Almost all the adult Fijians and Indians are vaccinated, and the children of the former are systematically vaccinated in every district where a native practitioner is stationed. The District Medical Officers report, however, that they find it necessary to exercise a good deal of supervision over their native subordinates in this work ; and in those provinces, therefore, where the latter are employed at remote distances from the former, one is forced to regard the degree of efficacy of the vaccinations they perform with some amount of distrust.

15. A terse and comprehensive summary of the sanitary conditions in the Labasa Medical District, by Dr. H. N. Joynt (the District Medical Officer), is appended to this report.

B. GLANVILL CORNEY,

Chief Medical Officer.

RETURN A.

STATISTICS of POPULATION.

	Europeans.	Aboriginal Fijians.	Rotumans.	Melanesians.	Indians. °	Miscellaneous and mixed bloods.	Total.
Number of inhabitants on 31st Dec., 1898	3,927	98,954	2,165	2,074	12,320	2,298	121,738
" Births during 1899	64	3,395	108	7	579	38	4,191
" Deaths " " " " "	26	3,871	104	38	258	22	4,319
" Arrivals by sea	557	—	4	100	929	94	1,684
" Departures	149	—	2	182	365	—	698
" Inhabitants on 31st December 1899	4,373	98,478	2,171	1,961	13,282	2,408	122,673
Increase	446	—	6	—	962	110	1,524
Decrease	—	476	—	113	—	—	589

Net Increase ... 935

RETURN B.

METEOROLOGICAL RETURN 1899.

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FIG. 1,
1899.

Months.	Temperature.					Rainfall.		Winds.		
	Solar Maximum.	Minimum on grass.	Mean Shade Maximum.	Mean Shade Minimum.	Range.	Mean.	Amount in inches.	Degree of humidity : Saturation 100°.	General Direction.	Average Force.
January ...	—	—	89.2	73.8	{ 92.5 } 67.8	{ 84 } 84	8.48	67	E.S.E.	2
February ...	—	—	87.7	74.5	{ 91.6 } 70.9	{ 83 } 83	12.95	74	E.S.E.	2
March ...	—	—	89.9	73.7	{ 93.0 } 71.4	{ 84 } 84	7.10	69	N.E.	2
April ...	—	—	86	73.5	{ 89 } 62.7	{ 82 } 82	19.89	71	E.	2
May ...	—	—	80.8	70.5	{ 87.3 } 62	{ 76 } 76	22.54	78.6	E.S.E.	2
June ...	—	—	82.2	68.1	{ 86.3 } 63.5	{ 76 } 76	3.60	73	S.S.E.	2
July ...	—	—	79.2	67.4	{ 88 } 72	{ 73 } 73	3.71	77	S.E.	2

August	...	—	—	79.9	69.7 {	86.2 64.9	} 74.1	9.93	75	E.S.E.	2
September	...	—	—	78.1	68.3 {	86.3 61.1	} 73	14.81	80	E.S.E.	3
October	...	—	—	83.0	70.7 {	92. 62.5	} 78	5.00	74	E.S.E.	2
November	...	—	—	84.7	73.5 {	87.6 66.	} 80	5.77	70	E.S.E.	3
December	...	—	—	84.5	74.1 {	89.9 69	} 80	16.62	75	E.S.E.	3
Means	...	—	—	83.8	71.5 {	93.0 61.1	} 78.5	10.87	73.6	E.S.E.	2½

The corrected mean reading of the barometer was 29.923 inches.
The highest reading was 30.146, on July 28th.
The lowest reading was 29.585, on November 15th.
The highest temperature in the shade was 93°, on March 2nd.
The lowest temperature in the shade was 61°.1, on September 23rd.
The greatest rainfall in one day was 13.18 inches, on April 19th.
The total rainfall in the year was 130.40 inches.
The number of days on which rain fell was 247.
There were no hurricanes, but 38 thunderstorms.

The observations were taken at Suva, 9 feet above the mean sea level.

C.

FIJI,
1899.

RETURN of DISEASES and DEATHS in 1899 at the following
INSTITUTIONS: — All ESTATE and PLANTATION
HOSPITALS.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES—			
Varicella	2	—	
Small-pox	—	—	
Measles	—	—	
Typhus	—	—	
Dengue	—	—	
Influenza	69	—	
Diphtheria	—	—	
Febricula	350	—	
Enteric Fever	1	1	
Cholera	—	—	
Dysentery	163	5	
Yellow Fever	—	—	
Malarial Fever—			
(a.) Intermittent... ..	22	—	
(b.) Remittent	—	—	
(c.) Pernicious R.	—	—	
Erysipelas	—	—	
Pyæmia	1	1	
Septicæmia	3	—	
Tetanus	7	6	
Tubercle	17	7	

Fiji,
1899.

Estate and Plantation Hospitals—cont.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES— <i>cont.</i>			
Leprosy—			
(a.) Tubercular	—	—	
(b.) Anæsthetic	—	—	
Yaws	186	1	
Syphilis—			
(a.) Primary	37	—	
(b.) Secondary	141	4	
(c.) Inherited	19	6	
Gonorrhœa	201	—	
Bubo	2	—	
Hydrophobia... ..	—	—	
Scurvy	—	—	
Alcoholism	—	—	
Delirium Tremens	—	—	
Rheumatism	39	—	
Rheumatic Fever	—	—	
Gout	—	—	
New Growth, non-malignant	—	—	
New Growth, malignant	—	—	
Anæmia	171	6	
Diabetes mellitus	—	—	
Diabetes insipidus	—	—	
Debility	58	12	
Hæmophilia neonatom	2	2	

*Estate and Plantation Hospitals—cont.*Fiji,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES—			
DISEASES OF THE NERVOUS SYSTEM—			
Sub-section 1—			
Diseases of the Nerves—			
Neuritis	3	1	
Meningitis	6	5	
Myelitis	—	—	
Hydrocephalus	—	—	
Encephalitis	—	—	
Abscess of Brain	—	—	
Congestion of Brain	10	—	
Sub-section 2—			
Functional Nervous Disorders—			
Apoplexy	—	—	
Paralysis	1	—	
Chorea	—	—	
Epilepsy	2	—	
Neuralgia	6	—	
Hysteria	6	—	
Convulsions	7	1	
Sub-section 3—			
Mental Diseases—			
Idiocy... ..	—	—	
Mania	3	—	
Melancholia	—	—	
Dementia	—	—	
Delusional Insanity	—	—	

*Estate and Plantation Hospitals—cont.*F131,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES—cont.			
Diseases of the Eye	1,086	—	
" " Ear	24	—	
" " Nose	2	—	
" " Circulatory System	3	1	
" " Respiratory System	461	15	
" " Digestive System ...	1,038	51	
" " Lymphatic System	30	—	
" " Urinary System ...	8	2	
" " Generative System—			
Male Organs ...	29	—	
Female " ...	37	—	
Connected with pregnancy... ..	31	2	
Diseases of the Organs of Locomo- tion.	42	—	
" " Cellular Tissue ...	241	—	
" " Skin... ..	696	—	
Injuries, General	69	—	
" Local	349	2	
Surgical Operations	—	—	
Malformations	—	—	
Poisons	3	1	
Parasites... ..	4	—	
Total	5,688	132	

APPENDIX.

Fiji,
1899.

Labasa, Fiji,

February 16th, 1900.

SIR,

I HAVE the honour, in accordance with your instructions, to present the following report for the medical district of Labasa, Vanua Levu, Fiji, for the year 1899.

2. This medical district practically consists of a sugar plantation employing indentured Indian coolies. On the adjacent lands are settled free Indians, engaged in agriculture and cattle raising. A few Fijian villages of sparse population are also included in it.

Topographically the district consists of a series of narrow, littoral, alluvial flats, bounding the estuaries of five rivers. To seaward the flats are fringed with mangrove from one to four miles deep; to landward they are enclosed by ranges of hills reaching 1,800 feet high. The rivers are tidal, and a few miles inland degenerate into small mountain streams. Upwards of 5,000 acres are under the cultivation of sugar cane.

3. The population is approximately 3,360, comprising Europeans, 120; Indians, 2,340; Fijians, 780; Solomon Islanders, 85; half-castes, 30; other races, 5.

Table showing birth and death rate.

Nationality.	Popula- tion.	Births.	Ratio per 1,000.	Deaths.	Ratio per 1,000.	Remarks.
Europeans	120	4	33·3	1*	8·3	*Due to drown- ing.
Indians ...	2,340	101	43·1	59†	25·2	†6 accidental.
Fijians ...	780	?	—	?	—	?
Polynesians	85	1	11·8	—	—	
Half Castes	30	3	100	—	—	
Others ...	5	—	—	—	—	

N.B.—Even of the Indians the births and deaths are only approximate, as I have no means of checking “free” Indians, who number 600.

FIJI,
1899

4. Situated on the leeward side of the island, and separated by a high range of mountains (2,000–3,000 feet high) from the windward, the climate may be roughly divided into two seasons: (1) a hot and wet, from December to April; and (2) a cool and dry, from May to November. In 1899 the rainfall of the five summer months amounted to 57·63 inches, and the mean maximum temperature averaged 91·4°. The rainfall of the seven cool months amounted to 25·94 inches, and the mean maximum temperature averaged 84·3°. The highest recorded temperature was 98°, and the lowest 58°. The hot season is characterised by heavy rains, thunderstorms, hot muggy days, and prevailing east and north or variable winds; the cool season is marked by prevailing south-east trade winds, dry bracing days, and cool nights with heavy dews.

Other meteorological statistics are given in the printed report* accompanying.

5. I purpose to comment briefly on some of the more important diseases met with. Labasa is a fairly healthy district, without any peculiar endemic diseases. Europeans enjoy excellent health.

6. Malaria is not met with. The few cases treated in hospital were chiefly mild quotidian intermittents contracted in India. Recently imported Indians, during their first year of residence, contribute most of the hospital cases. After a few years' residence malarial attacks are rarely seen.

7. Dysentery is not a common complaint; it is always sporadic and mild. Indeed, when one reflects on the habits of the Indian coolies, and the free way in which they drink drain or any water, the paucity of attacks is remarkable. I have not treated a European for dysentery for two years. This disease seems to be most frequent towards the end of the dry season—from September to November.

8. Amongst adults diarrhœa is not very common. On the other hand, it is extremely common amongst children, and especially so amongst children under one year of age. This is no doubt largely due to errors of diet, and the common practice of feeding infants on cow's milk and condensed milk whilst the mothers are at work in the field. Nineteen out of the 20 cases of death from diseases of the digestive organs recorded in the statistical report were caused by athrepsia, or enteritis of one form or another, in infants, due to improper feeding.

Occasionally in the hot season outbreaks of acute gastro-enteritis, with collapse, have been noted in adults, and at the same time the children have suffered from choleraic diarrhœa—evidently owing to some telluric or climatic influence.

* Not reprinted.

9. Under the heading of tubercular diseases, acute miliary tuberculosis and acute tuberculo-pneumonic phthisis are met with in a relatively large number of cases.

FIG 1,
1899.

10. Yaws is very prevalent. The admissions for this disease numbered, in 1899, 170, or 8·3 per cent. of all diseases. Many of these were, of course, readmissions for relapses. This loathsome complaint is spreading rapidly amongst the Indian population, and the establishment of isolation hospitals for the compulsory treatment of yaws would be most beneficial.

11. Tropical anæmia (including ankylostomiasis) is another prevalent disease, especially during the hot season. Thus, out of 81 cases, 49 were admitted during the five months December to April. Fortunately no deaths occurred from this cause.

12. The most common complaint here is conjunctivitis; 596 cases, or nearly 26 per cent. of all admissions, came under treatment. Flies rather than climate are, I believe, the great factors of infection.

13. Diseases of the skin.—The large number of entries under this heading is due to ulcers, mostly about the legs and feet. New arrivals from India suffer much from ulcers during the first year of industrial residence; thereafter ulcers rarely occur. The most common other skin troubles are tinea circinata, and a disease characterised by centrifugally spreading purulent bullæ of a highly infectious nature. It appears in two forms: (1) On the apparently sound integument of the lower extremity a crop of bullæ appear, and, unless checked, will spread, undermining the whole epidermis; or (2) An existing cut or sore is attacked, and the above process gone through. This disease corresponds somewhat to that termed pemphigus contagiosus in Davidson's "Diseases of Warm Climates," except that here I have never seen it on the axilla, only on the lower extremity, and occasionally on the hand.

14. Three cases of acute yellow Atrophy of the Liver, all adult males, occurred in the district. Only one came under my personal observation.

15. Fifty-nine Indians died during the year: 19 adults and 40 children. Six of the adult deaths were due to violence. The incidence of death amongst the children was divided thus:—

One month old and under	...	...	10
Under 6 months of age	...	...	21
" 12 " "	...	...	4
" 5 years " "	...	...	5
Over 5	...	...	—

Fiji,
1899.

16. The sanitary state of the district is good. The native villages are kept clean, a special Inspector being appointed for this purpose. The Indian coolies live either in "Lines" on the various plantations, which are strictly looked after daily; or on three-acre allotments outside the plantations. These latter settlements are kept in good order. The water supply is being steadily improved; the Government are supplying pumps and piping in the native villages where the natural water supply is not good. On the plantations the water supply is excellent.

17. During 1899 I performed 44 vaccinations, of which I regret to say only 16 were successful. All the adult Indians are vaccinated before arrival in Fiji. A special native medical vaccinator looks after the vaccination of Fijians.

I have, &c.,

HENRY NOBLE JOYNT,

District Medical Officer.

- No. 7.

HONG KONG,
1899.

HONG KONG.

REPORT OF THE PRINCIPAL CIVIL MEDICAL
OFFICER FOR 1899.

POLICE.

The admissions to the hospital were 204 in excess of those of the previous year, the numbers being 692 as compared with 488 in 1898; the average strength of the force being 716 as compared with 630 in 1898.

This large increase was to a great extent caused by admissions from the New Territory.

Prior to the hoisting of the Flag in April, 1899, accompanied by the Director of Public Works and the Captain Superintendent of Police, I spent some days in visiting the district and selecting the most suitable sites for police stations.

Malarial fevers have contributed the greatest number of cases; undoubtedly much of the fever has been occasioned by the temporary nature of the buildings in which the police have of necessity been housed; when permanent brick buildings have taken the place of the temporary buildings, mostly matsheds, I anticipate a considerable diminution in the number of cases of malarial fever.

The admissions to hospital from the various sections of the Force are given in the following table:—

Year.	Europeans.	Indians.	Chinese.
1890	149	254	179
1891	169	285	118
1892	152	224	120
1893	134	255	133
1894	127	244	134
1895	96	254	116
1896	94	370	124
1897	99	320	107
1898	87	279	122
1899	117	421	154

HONG KONG, 1899. There were 16 deaths amongst the members of the force during the year—three less than in 1898 ; four of these occurred in the hospital, viz , three Europeans and one Indian ; the latter was a police recruit and died of phthisis ; of the Europeans one died from acute peritonitis, one from delirium tremens and the third from hyperpyrexia occurring in the course of fever.

Table I gives the admissions to the hospital and the mortality during each month of the year ; from this return it will be seen that August and September were the months in which the greatest number of admissions occurred.

Table II. gives the average strength, rate of sickness and mortality.

Table III. shows the admissions to the hospital from the different stations and districts in each month of the year ; to this return have been added the various stations in the New Territory.

Of the old stations *Aberdeen* continues much healthier, there being only half the number of admissions there were in 1898.

Tsim Tsa Tsui (Water Police) *Station* contributed more than double the number of cases in 1898 ; this increase, which occurred chiefly amongst the Chinese, was due to the prevalence of beri-beri.

In the New Territory *Un Long* and *Táipó* contributed the largest number of admissions.

The following table gives the total admissions to hospital and deaths in the force for the last ten years :—

Year.	Admissions.	Deaths.
1890	582	7
1891	570	7
1892	496	7
1893	522	6
1894	505	15
1895	466	8
1896	588	14
1897	526	7
1898	488	19
1899	692	16

TROOPS.

HONG KONG,
1899.
—

The number of admissions to the hospital was 818 in excess of that in 1898, whilst the average strength of the garrison was only increased by 125.

The rate of mortality was increased in both the European and Indian troops, that in the latter being more than double the rate in 1898; the number of deaths was 29 as compared with 21 in the previous year.

The following table gives the sickness and mortality among the troops for the past ten years. :—

Year.				Admissions.	Deaths.
1890	...	...	...	1,915	15
1891	...	...	...	1,851	17
1892	...	...	...	2,844	31
1893	...	...	...	2,927	28
1894	...	...	...	2,905	39
1895	...	...	...	3,099	28
1896	...	...	...	4,274	19
1897	...	...	...	4,455	15
1898	...	...	...	3,896	21
1899	...	...	...	4,714	29

GOVERNMENT CIVIL HOSPITAL.

The number of admissions is the greatest yet recorded in the history of the hospital.

HONG KONG, The admissions and deaths in-hospital for the past ten years
1899. are as follows :—

Year				Admissions.	Deaths.
1890	...	...	...	1,957	98
1891	...	...	...	1,867	84
1892	...	...	...	1,715	68
1893	...	...	...	1,835	67
1894	...	...	...	1,963	101
1895	...	...	...	2,283	114
1896	...	...	...	2,598	143
1897	...	...	...	2,445	119
1898	...	...	...	2,571	138
1899	...	...	...	2,734	114

The rate of mortality, 4.16 per cent., is by far the smallest recorded for the past six years.

The largest number of admissions occurred during the months of August and September ; a similar fact has been recorded in the case of the sick police: so we may conclude that in 1899 these two months were the most unhealthy during the year.

INFECTIOUS HOSPITALS : KENNEDY TOWN HOSPITAL.

There were 263 admissions during the year :—

—				Cases.	Deaths
Small-pox	...	...	...	37	7
Plague	...	...	...	226	185

In addition eleven were under observation and two in attendance.

The mortality of plague cases was somewhat higher than usual—81 per cent.

VICTORIA GAOL.

HONG KONG,
1899.

The following table gives the number of admissions to the gaol and the daily average number of prisoners for the past ten years :—

Year.			Total number admitted to Gaol.	Daily average No. of Prisoners.
1890	...	...	3,444	566.00
1891	...	...	5,231	507.00
1892	...	...	5,046	515.00
1893	...	...	4,010	458.00
1894	...	...	3,913	455.00
1895	...	...	5,014	472.00
1896	...	...	5,582	514.00
1897	...	...	5,076	462.00
1898	...	...	5,427	511.00
1899	...	...	4,789	434.00

The total admissions to the gaol were 4,789, or 793 less than in 1898; the daily average 434, or 77 less than in the previous year.

The total number of admissions to hospital were 503 as compared with 298 in 1898.

Remittent fever caused 63 of them as against 24 in the previous year; dysentery and diarrhœa contributed more cases, and 81 were admitted suffering from debility as against 14 in 1898.

There were five deaths from natural causes, one prisoner committed suicide by hanging himself, and two were executed.

The new warders' quarters is in course of erection; when this building is finished the new hospital will be available; it is at present occupied by the warders.

Admissions and Mortality in the Government Civil Hospital during the Year 1899.

GENERAL DISEASES.	ADMISSIONS.			TOTAL.	DEATHS.			TOTAL.
	Euro- peans.	Indians & Coloured Persons.	Asiatics (Japanese included).		Euro- peans.	Indians & Coloured Persons.	Asiatics.	
Small Pox	2	—	—	2	—	—	—	—
Cow Pox	1	—	—	1	—	—	—	—
Chicken Pox	1	—	1	2	—	—	—	—
Measles	2	1	—	3	—	—	—	—
Rubella, Synonyms, Rotheln, German Measles, Epidemic Rose Rash.	7	3	3	13	—	—	—	—
Plague	4	4	15	23	—	1	2	3
Influenza	17	10	5	32	—	—	—	—
Mumps	7	—	3	10	—	—	—	—
Diphtheria—								
Laryngeal Diphtheria, Synonym, Membranous Croup	2	—	4	6	—	—	2	2
Simple Continued Fever, Synonym, Febricula...	1	—	5	6	—	—	—	—

Enteric Fever, Synonym, Typhoid Fever	...	27	2	4	33	6	1	4	11
Dysentery ...	...	25	17	5	47	1	—	1	2
Beri-beri, Synonym, Kakké	...	—	—	44	44	—	—	7	7
Malarial Fever—									
<i>a.</i> Intermittent, Synonym, Ague	...	95	179	93	367	—	—	—	—
<i>b.</i> Remittent	...	34	37	31	102	1	1	1	3
<i>c.</i> Malarial Cachexia	...	2	3	1	6	—	2	—	2
Phagedæna—									
<i>a.</i> Sloughing Phagedæna	...	4	2	17	23	—	—	—	—
Pyæmia	...	2	1	1	4	2	1	—	3
Tubercle	...	—	2	—	2	—	—	—	—
Syphilis, Synonym, Pox—									
<i>a.</i> Primary, Hard Chancre or infecting sore	...	18	7	38	63	—	—	—	—
<i>b.</i> Secondary or Constitutional	...	35	6	65	106	—	—	1	1

Admissions and Mortality in the Government Civil Hospital during the Year 1899—continued.

GENERAL DISEASES.	ADMISSIONS.			TOTAL.	DEATHS.			TOTAL.
	Euro- peans.	Indians & Coloured Persons.	Asiatics (Japanese included).		Euro- peans.	Indians & Coloured Persons.	Asiatics.	
Syphilis, Synonym, Pox— <i>cont.</i>								
c. Inherited	—	—	3	3	—	—	2	2
Gonorrhoea, Synonym, Clap, Blennorrhagia	24	12	18	54	—	—	—	—
Diseases dependent on Animal Parasites	8	8	8	24	—	—	—	—
" " Vegetable "	5	6	4	15	—	—	—	—
Effects of Animal Poisons	1	—	2	3	—	—	—	—
" " Vegetable "	1	—	7	8	—	—	—	—
" " Inorganic "	—	—	1	1	—	—	—	—
" " heat	1	2	16	19	—	1	3	4
" " chemical agents	2	—	2	4	2	—	—	2
" " immersion	1	—	—	1	—	—	—	—

Alcoholism—									
Delirium tremens	...	...	...	...	4	6	75	4	—
Rheumatic Fever, Synonym, Acute Rheumatism	...	...	...	...	5	4	19	—	—
Rheumatism	...	...	...	...	35	42	94	—	—
Gout...	...	...	...	...	—	1	1	—	—
Osteoarthritis, Synonyms, Arthritis Nodosa—									
Arthritis defarmanis, Rheumatoid arthritis	...	...	...	...	2	—	2	—	—
Cyst	...	...	...	...	—	2	2	—	—
New Growth, non-malignant	...	...	...	...	1	1	5	—	1
" malignant	...	...	...	...	1	—	14	—	—
Anemia	...	...	...	...	—	1	2	—	—
Idiopathic Anæmia, Synonym—									
Pernicious Anemia	...	...	...	...	—	—	1	—	1
Diabetes mellitus, Synonym, Persistent Glycosuria	...	...	...	...	1	3	5	—	—
Congenital Malformations	...	...	...	...	2	—	3	—	—
Debility	...	...	...	...	4	7	14	—	—

Admissions and Mortality in the Government Civil Hospital during the Year 1899—continued.

GENERAL DISEASES	ADMISSIONS.			TOTAL.	DEATHS.			TOTAL.
	Euro- peans.	Indians & Coloured persons.	Asiatics (Japanese included).		Euro- peans.	Indians & Coloured Persons.	Asiatics.	
LOCAL DISEASES.								
Diseases of the—								
Nervous System	42	11	75	128	2	—	3	5
Eye	12	7	27	46	—	—	—	—
Ear	3	5	1	9	—	—	—	—
Nose	—	—	1	1	—	—	—	—
Circulatory System	9	4	7	20	2	—	1	3
Respiratory	42	68	55	165	7	4	14	25
Digestive	82	61	67	210	2	1	3	6
Lymphatic	24	14	38	76	—	—	—	—

Diseases of the—

Urinary System	...	...	...	...	...	7	9	28	3	3	3	9
Male Organs	...	...	...	...	...	12	21	59	—	—	—	—
Female Organs	...	...	...	...	...	—	57	67	—	—	—	—
Organs of Locomotion	...	...	...	...	...	22	55	113	—	1	1	1
Connective Tissue	...	...	...	...	...	20	14	48	—	—	—	—
Skin	...	...	...	...	...	15	13	37	—	1	1	1
Injuries	...	...	...	...	...	1	38	42	—	1	1	1
Local Injuries	...	...	...	...	...	39	259	347	1	14	15	15
Under Observation...	...	...	...	...	...	15	42	63	—	—	—	—
Total...	...	...	...	...	...	811	1,264	2,734	33	15	66	114

HONG KONG
1899.

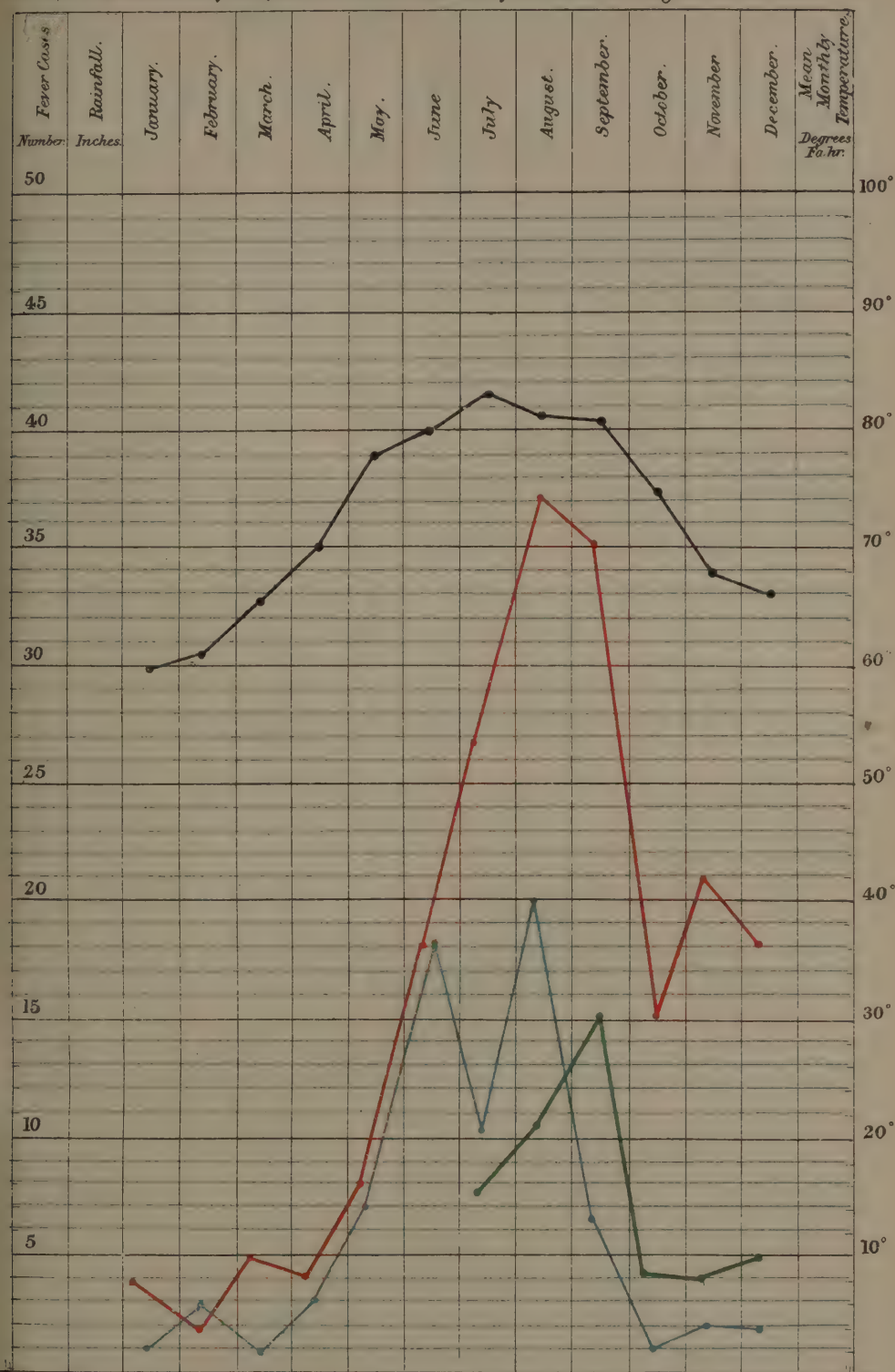
Admissions and Mortality in the Government Civil Hospital during the Year 1899.

General Diseases.	Admissions.			Deaths.		
	Europeans.	Indians.	Asiatics.	Europeans.	Indians.	Asiatics.
			Total.			Total.
<i>Group A.—Sub-Group 1.</i>						
1. Small-pox (transferred to Small-pox Hospital)	2	—	—	—	—	—
2. Cow-pox	1	—	—	—	—	—
3. Chicken pox	1	—	1	—	—	—
4. Measles	2	1	—	—	—	—
5. Epidemic Rose-rash (Rotheln)	7	3	3	—	—	—
6. Scarlet Fever	—	—	—	—	—	—
7. Dengue	—	—	—	—	—	—
8. Typhus	—	—	—	—	—	—
9. Plague	4	4	15	—	1	2
			23			3

HONG KONG,
1899.*Admissions and Mortality in the Government Civil Hospital during the Year 1899.*

General Diseases										Admissions.			Deaths.			Total.			
										Euro- peans.	Indians.	Asiatics.	Total.	Euro- peans.	Indians.		Asiatics.		
<i>Group A.—Sub-Group 2.</i>																			
1. Malarial Fever—																			
a. Intermittent, Synonym, Ague																			
b. Remittent																			
c. Malarial Cachexia																			
2. Beri-Beri																			
<i>Monthly Table of Malarial Fever Cases amongst the Police.</i>																			
Month.	Intermittent.				Remittent.				Total Number of Deaths.										
	Euro- peans.	Indians.	Asiatics.	Deaths.	Euro- peans.	Indians.	Asiatics.	Deaths.		Euro- peans.	Indians.	Asiatics.	Total.						
January	1	3	—	—	—	—	—	—	4	—	—	—	—						
February	—	—	—	—	—	—	—	—	2	—	—	—	—						
March	—	—	—	—	—	—	—	—	5	—	—	—	—						
April	—	—	—	—	—	—	—	—	4	—	—	—	—						
May	—	—	—	—	—	—	—	—	8	—	—	—	—						
June	2	7	1	—	—	—	—	—	18	—	—	—	—						
July	5	15	7	—	1	6	—	—	34	—	—	—	—						
August	7	26	4	—	7	7	—	1	47	—	—	—	—						
September	4	24	7	—	1	14	—	2	50	—	—	—	—						
October	1	11	3	—	—	4	—	—	19	—	—	—	—						
November	4	15	2	—	2	1	3	—	25	—	—	—	—						
December	1	16	1	—	1	1	3	—	23	—	—	—	—						
Total ..	25	143	26	—	6	32	7	1	239	—	1	131	219	169	1	3	—	12	

DIAGRAM showing Cases of Malarial Fever occurring every Month amongst the Police Force, the Mean Monthly Temperature and the Monthly Rainfall during the Year 1899.



Red Wave, Intermittent Fever Cases
 Green Wave, Remittent " "
 Blue Wave, Monthly Rainfall in Inches.
 Black Wave, Mean Monthly Temperature in degrees Fahrenheit.



GOVERNMENT CIVIL HOSPITAL.

HONG KONG,
1899.

In-patients.—The total number shows an increase of 163 as compared with 1898; as already stated, there were more in-patients treated during 1899 than in any previous year; the figures for the past three years are as follows :—

Year.				Total.
1897	...	..	...	2,445
1898	...	...	...	2,571
1899	...	...	...	2,734

Deaths.—The total number of deaths was 114, a percentage of 4.16, the lowest mortality for the past six years; of these 39 were in a moribund condition when admitted, 31 dying within twenty-four hours and 8 within forty-eight hours of their admission.

The average daily number of sick was 106.36 as against 98.81 in 1898.

Women.—The number admitted was 402. At present the only accommodation we have for women and children of every nationality is one general ward with 14 beds, and one private ward; further accommodation for women and children is very much required, and will be provided in the New Women's Jubilee Hospital.

Private Paying Patients.—The number of first and second class patients for the past three years has been as follows :—

				1897.	1898.	1899.
First class	...	...		53	58	74
Second class	...	...		153	154	158
Total	...	...		206	212	232

HONG KONG,
1899.

NATIONALITY.

Europeans.—As compared with the previous year there was an increase of 23.

Indians.—The largest increase was amongst the Indians, 226 more having been admitted than in 1898. The Police contributed 141 of this number, the greater majority being cases of malarial fever admitted from the New Territory; the rest are destitute Indians who have come to this colony in search of work.

Asiatics.—These form by far the greatest majority of patients admitted to the hospital, no less than 1,264 out of a total of 2,734 being Chinese and Japanese; many cases have had to be refused admission, and if it is intended that the hospital shall meet with the public requirements, further accommodation will have to be provided.

Diseases.—The following diseases caused the greatest number of admissions :—

Fever :—

Malarial—Intermittent	...	...	367
„ Remittent	...	...	102
Enteric	...	...	33
Febricula	...	...	6

508

Venereal Diseases	...	...	226
Diseases of Digestive System	...	...	210
„ „ Respiratory	„	...	165
„ „ Nervous	„	...	128

Injuries of various kinds contributed 347 cases.

Deaths.—The following diseases caused the greatest number of deaths :—

Disease of Respiratory System...	...	25
Enteric Fever	...	11
Disease of Urinary System	...	9

Whereas 15 deaths were the result of injuries.

Police.—The total number admitted was 208 in excess of the previous year, there being 30 more Europeans, 142 more Indians and 32 more Chinese under treatment.

Gaol Officers.—There were 56 under treatment as compared with 30 in the previous year :—

Principal Warder	...	...	1
Warders...	...	...	23
Assistant Warders	...	...	8
Guards	...	...	24

56

malarial fevers and influenza contributing the greatest number of admissions, viz., 17 and 4 respectively.

Influenza.—There were 32 cases under treatment, with no deaths. HONG KONG,
1899

Enteric Fever.—There were 33 cases under treatment, with 11 deaths: 13 originated locally, one being an Indian constable from the Central Police Station, one was from Canton, and the remaining 19 were from ships, nine of these being from foreign men-of-war, all having contracted the disease away from the colony.

As Dr. Manson states in his book on *Tropical Diseases*, “this disease is a very virulent one in the tropics, with a death rate twice as heavy as the death rate of typhoid in England.”

Our experience also bears out his statement “that constipation is much more common in tropical typhoid than in the disease in Europe.”

Diphtheria.—Six patients were admitted suffering from this disease, with two deaths, both Chinese; in each case tracheotomy was performed.

Cholera.—There were no cases admitted suffering from this disease; this is the third year in succession that we have been free from this disease.

Dysentery.—Forty-seven cases were under treatment, with two deaths.

Malarial Fevers.—I have to report a large increase in the number admitted suffering from this class of disease, the figures being 469 as compared with 334 in 1898.

There were three deaths—one European, one Indian and one Chinese.

This large increase was mainly due to police admitted from stations in the New Territory; by reference to the Table on p. 152 it will be seen that 118 admissions are thus accounted for.

Knowing how malarious many of the districts in the New Territory were, instructions were drawn up for the guidance of officers stationed there, special prominence being given to the prophylactic use of quinine in small daily doses during the summer months.

The disease, although prevalent, was not of a severe type, there being only one death, that of the inspector at Cheang Chau, and it is doubtful whether this was a case of true malarial fever.

He was admitted to the hospital in July last with fever, and rapidly developed hyperpyrexia, his temperature rising to F. 109°.

A careful *post mortem* examination was made and, as this was a most exceptional case, portions of the various organs were preserved and sent to Dr. Manson. From a report which I have

HONG KONG, received from the Tropical School of Medicine it would be more correct to consider this as a case of Siriasis or Thermic fever.

Two other cases of hyperpyrexia occurred during the year; blood films of both of these were sent to Dr. Manson for examination, but no malarial parasites were found; they occurred in patients suffering from *delirium tremens*.

Beri-beri.—There were 44 cases under treatment, with seven deaths, an increase of 15 as compared with 1898.

Seventeen were Chinese constables, seven being admitted from the Central and six from the Water Police Station; most of these cases were recruits, the disease developing during their three months' probation.

Venereal Diseases.—The number of admissions from constitutional syphilis continues to show a small but steady increase as the following figures prove :—

				1897.	1898.	1899.
Primary Syphilis	...			66	76	63
Secondary	...	...		82	87	106
Total	...	...	...	148	163	169

The large increase in those suffering from secondary syphilis shows that the disease is much more prevalent in the colony; 65 of these cases were Chinese.

Many of this nationality have to be treated as out-patients on account of our limited accommodation; unfortunately, Chinamen suffering from venereal diseases are not admitted to the Tung Wah Hospital. This is a fact much to be deplored, as now this institution is becoming more under the influence of Western medicine, many cases might be treated there who now undoubtedly disseminate this disease abroad.

There were 54 cases under treatment suffering from gonorrhœa as against 48 in 1898.

Injuries.—There were 347 admissions with 15 deaths as against 352 with 18 deaths in 1898.

Surgical Operations.—There were 234 during the year with six deaths as against 224 with 10 deaths in the previous year.

Amongst the more important operations during the year were HONG KONG
1899
the following :—

Lithotomy.—A Chinaman was admitted from Táipó, in the New Territory, and was successfully operated on, the calculus weighing $2\frac{1}{4}$ ounces.

Hernia.—Five cases were operated on with but one fatal result ; this was the case of a Chinaman in whom the hernia had been strangulated for some days ; the intestine was quite gangrenous, and although it was removed and an artificial anus formed, the patient never rallied. It is unfortunate that the Chinese do not realise the serious nature of this complaint and present themselves for treatment earlier.

Abscess of Liver.—Three cases were operated on successfully ; the notes of two are given in the appendix. (See next page.)

Laparotomy.—This operation was performed on a European for perityphlitis with a successful result.

Gunshot Wounds.—There were several cases admitted during the year and operated on. We found the Röntgen rays of great assistance in locating the same ; in one severe case of injury to the shoulder, in which the head of the humerus was smashed, the joint was excised and, although the bullet could not be found, the man made an excellent recovery.

Anæsthetics.—Chloroform has been administered 164 times during the past year. Unfortunately two deaths occurred from its effects—the first in the hospital. Both cases were Europeans. These cases were fully reported to *The Lancet*. The deaths occurred under different administrators and under different systems.

The majority of cases (156) were anæsthetised by Krohne and Seismann's modification of Innker's inhaler, and the remainder with Skiemer's inhaler.

Using the former method—

The average time taken to produce anæsthesia was 5'. 37".

The average duration of the operation 11' 26", and the average quantity used was 2 drs. 13 minims.

No notes were kept of the cases under Skiemer's inhaler, but it undoubtedly uses or rather wastes a much larger amount of the anæsthetic, and the danger of an overdose is less easily guarded against.

The drawback to Innker's inhaler is the amount of india rubber used in the machine, as this rapidly deteriorates in this climate.

HONG KONG,
1899.

FRACTURES AND DISLOCATIONS.

The following fractures and dislocations have been treated during the year :—

Fracture of the skull	...	...	4
" " spine	...	...	1
" " humerus	...	...	5
" " radius and ulna..	...	...	6
" " femur	...	...	8
" " tibia	...	...	10
" " inferior maxilla..	...	...	1
" " ribs	...	...	1
" " clavicle...	...	...	1
Dislocation of the hip	...	...	1
" " ankle...	...	...	2
" " shoulder	...	...	1
" " elbow...	...	...	2

Alcoholism.—There were 75 cases admitted, with four deaths ; two of these, as already stated, developed hyperpyrexia, which was the immediate cause of death.

Poisoning.—There were eight cases of poisoning during the year ; five were cases of datura poisoning, two of opium, and in one the poisonous agent was exalgine ; all of these recovered.

J. M. ATKINSON,

Principal Civil Medical Officer.

APPENDIX.

HEPATIC ABSCESS. OPERATION. RECOVERY.

An English officer in the mercantile marine, aged 39, was admitted to hospital on the 7th February.

Previous history.—He had had an attack of dysentery in 1881. Last March was laid up with an attack of malarial fever on the West Coast of Africa, and had two relapses whilst in England.

Present history.—For the last five or six months has been troubled with pain in the region of the liver, which four days ago became much more severe and was accompanied by pain in the right shoulder. Liver dulness is increased with distinct tenderness in lower intercostal spaces on right side. Breath very short. Temperature 100·8° on the 9th. Under chloroform an aspirating needle has proved the presence of pus ; an incision was made in the 9th interspace and a drainage tube inserted. The temperature at once came down to normal and remained so up to 25th day,

when there was a slight rise (100°) owing to a small accumulation of pus in the rapidly closing sinus. This was evacuated, and the patient was discharged quite cured on the 36th day, having gained 8 lbs. in a week. HONG KONG,
1899.
—

ABSCESS OF LIVER. REMOVAL OF LARGE GALL STONE. RECOVERY.

Ng Wan, Chinese lukong, aged 38, was admitted on 30th May.

He had been ill with fever four days. The liver dulness was increased two fingers' breadth below the cartilages and was very tender, especially over the seat of the gall bladder. There was dulness in the right chest posteriorly, with feeble breath sounds. He had never had dysentery. The temperature varied from 99° in the morning to 104° in the evening.

On the 6th June the liver was explored and pus found, and next day under an anæsthetic an incision was made below costal cartilage of 7th rib, in nipple line, and a tube was inserted into an abscess and two pints of pus evacuated. The temperature dropped at once and kept normal. On 16th August, as there was still a discharging sinus, the patient was put under chloroform again and the sinus scraped. A calculus was felt and part removed. On 21st of August he was again operated on, and after some trouble a calculus was removed in pieces weighing 420 grains. The patient rapidly improved in weight from 114 to 127 lbs., and general health, and was discharged on 16th September, with the sinus quite healed and the liver dulness normal. Throughout the case there was no jaundice or any bile discharged through the sinus.

SEVERE WOUND OF KNEE JOINT. SUTURE OF PATELLA. RECOVERY.

A healthy Chinese male adult was admitted on 31st July, at 11.45 p.m., with a severe wound of the knee joint. The joint was washed out, the knee put up in McIntyre's splint and the patient put to bed.

Next morning, under an anæsthetic, it was found that he had a clean cut wound through the patella about $\frac{1}{2}$ in. from the lower border and notching the outer condyle about 2 inches in depth. It was determined to give the patient a chance of preserving his leg, and the wound was most thoroughly cleaned out by irrigation sponges and a nail brush across the bony section. Some time and care were bestowed on this, and to this fact must be attributed the very excellent result. The patella was brought together by two silver wire sutures and the skin wound sewn with silk. The knee was then fixed in a McIntyre's splint. There was scarcely

HONG KONG, any fever throughout. The splint was removed on the 28th day
 1899. and passive movement begun. The patient was discharged on
 — 27th September, and three months afterwards was seen here with
 a good useful leg. He was able to bend it about 45°.

PROTRUSION OF THE INTESTINES IN A NEW BORN INFANT.

On April 8th, at 9 a.m., a Chinese female child was brought to hospital immediately after birth. On removing the filthy wrappings, the cord with placenta attached and about two feet of intestines were found lying on the abdomen. On examination it was seen that the cord about two inches from the umbilicus was thinned out and attached all round an opening into the abdomen about 1½ inches in diameter, through which the intestines had escaped. The child was crying a little, but did not seem in any pain nor was it at all collapsed. The intestines were cleaned and after some trouble were returned, a ligature of silk was slipped round the opening and tied, and the cord then dissected off. At 6 p.m. this ligature unfortunately slipped, and the intestines had again to be returned. Three deep and three superficial silk sutures were now inserted.

The child throughout took milk well, though there was occasionally some vomiting. The stitches were removed on the sixth day and the baby discharged on the 20th day quite well. There was no rise of temperature throughout the case save on the third day, when it reached 99·6. This abnormality is a rare one, as no one who saw the case had ever seen anything similar. The absence of peritonitis throughout the case is worthy of note.

VICTORIA GAOL HOSPITAL.

ADMISSIONS and MORTALITY in the HOSPITAL during the
 YEAR 1899.

Diseases.					Cases.	Deaths.	Remarks.
GENERAL DISEASES—							
Plague	...	...	...	...	1	—	
Influenza	...	...	...	...	4	—	
Enteric Fever	...	...	...	...	2	—	
Dysentery	...	...	...	...	18	—	
Beri-beri	...	...	...	...	2	1	

Admissions and Mortality in the Hospital during the HONG KONG,
Year 1899—*continued.* 1899.

Diseases.	Cases.	Deaths.	Remarks.
GENERAL DISEASES— <i>cont.</i>			
Malarial Fever—			
(a) Intermittent	7	—	
(b) Remittent	63	—	
Leprosy—			
(a) Tubercular	3	—	
Syphilis—			
(a) Primary	4	—	
(b) Tertiary	4	—	
Gonorrhoea	3	—	
Alcoholism	2	—	
Rheumatism	4	—	
Anæmia	4	—	
Debility	81	—	
LOCAL DISEASES—			
DISEASES OF THE NERVOUS SYSTEM—			
Sub-section 2—			
Functional Nervous Disorders—			
Apoplexy	2	—	
Sub-section 3—			
Mental Diseases—			
Idiocy... ..	1	—	
Dementia	2	—	
Delusional Insanity	1	—	

HONG KONG, Admissions and Mortality in the Hospital during the
1899. Year 1899—*continued.*

Diseases.					Cases.	Deaths.	Remarks.
LOCAL DISEASES— <i>cont.</i>							
Diseases of the Eye...	...	...			2	—	
" " Ear...	...	...			3	—	
" " Circulatory System					13	2	
" " Respiratory System					17	1	
" " Digestive System...					78	1	
" " Lymphatic System..					18	—	
" " Urinary System ...					8	—	
" " Generative System..					4	—	
" " Organs of Locomotion.					1	—	
" " Cellular Tissue ...					51	—	
" " Skin ...	...	...			20	—	
Injuries, Local ...	...	...	...		20	—	
Parasites ...	...	...	...		1	—	
Under Observation ...	...	...	...		59	—	
Total for the year ...					503	5	

Other Deaths :—Suicide by hanging 1
 Executions 2
 Total 3

VICTORIA GAOL.

HONG KONG,
1899.

CASES treated by the MEDICAL OFFICER, but NOT ADMITTED
to the HOSPITAL during the YEAR 1899.

Diseases.	Cases.	Deaths.	Remarks.
GENERAL DISEASES—			
Malarial Fever—			
(a) Intermittent	19	—	
(b) Remittent	45	—	
Syphilis—			
(a) Primary	71	—	
(b) Tertiary	19	—	
Gonorrhoea	61	—	
Rheumatism	104	—	
Debility	51	—	
LOCAL DISEASES—			
Diseases of the Circulatory System	9	—	
„ „ Respiratory System	96	—	
„ „ Digestive System ...	387	—	
„ „ Lymphatic System..	56	—	
„ „ Cellular Tissue ...	9	—	
Total for the year ...	972	—	

ADMISSIONS and MORTALITY in the TUNG WAH HOSPITAL during the Year 1899, with the proportion of
Cases treated by Western and Chinese methods.

Diseases.	Admissions.			Deaths.		
	Western Treatment.	Chinese. Treatment.	Total.	Western Treatment.	Chinese Treatment.	Total.
GENERAL DISEASES—						
*Small-pox	4	—	4	1	—	1
*Measles	1	—	1	—	—	—
*Plague	468	—	468	75	—	75
Influenza	3	12	15	—	—	—
Diphtheria	1	—	1	—	—	—
Enteric Fever	2	5	7	1	4	5
Dysentery	8	37	45	3	22	25
Beri-beri	67	212	279	17	106	123
Malarial Fever—						
(a) Intermittent... ..	9	63	72	—	2	2

Admissions and Mortality in the Tung Wah Hospital during the Year 1899, with the proportion of Cases treated by Western and Chinese methods—*continued*.

Diseases.	Admissions.			Deaths.		
	Western Treatment.	Chinese Treatment.	Total.	Western Treatment.	Chinese Treatment.	Total.
LOCAL DISEASES—						
Diseases of the Nervous System ...	29	38	67	11	30	41
" " Eye ...	22	—	22	—	—	—
" " Circulatory System...	22	56	78	13	41	54
" " Respiratory System	68	389	457	31	262	293
" " Digestive System ...	52	124	176	17	46	63
" " Lymphatic System ...	3	7	10	—	—	—
" " Urinary System ...	22	17	39	8	14	22
" " Generative System : —	—	—	—	—	—	—
Male Organs ...	10	1	11	—	—	—
Female Organs ...	3	4	7	—	1	1

HONG KONG,
1899,

Diseases of the Organs of Locomotion	...	...	22	11	33	2	5	7
" " Cellular Tissues	...	...	44	59	103	4	3	7
" " Skin	...	...	36	37	73	—	—	—
General Injuries	...	...	1	—	1	—	—	—
Local Injuries	...	...	36	109	145	4	3	7
Poison	...	...	1	—	1	1	—	1
Total...	...	...	1,051†	1,491	2,542	212‡	640	852

† Includes 485 sent (76, as below, after death) to Kennedy Town and other Hospitals.

‡ Includes 1 Small-pox and 75 Plague, received *in extremis*, and allowed to die before removal to Kennedy Town.

JAMES A. LOWSON,
Inspecting Medical Officer.

HONG
KONG,
1899.

No 8.

HONG KONG.

REPORT ON THE HEALTH AND SANITARY CONDITION OF THE COLONY OF HONG KONG FOR 1899.

POPULATION.

The estimated population of the Colony for 1899 was 259,310. There were 1,132 births and 6,181 deaths; of the latter, 1,434 were from plague.

The *birth-rate* was 4·3 per 1,000, as against 4·7 per 1,000 in 1898.

The *death-rate* was 23·8 per 1,000, as compared with 22·30 per 1,000 in 1898. Excluding the deaths from plague the death-rate would have been 18·3 per 1,000.

The following figures will show the comparison of the *death-rate* in the different nationalities for the last two years :—

	Death-rate.	
	1898.	1899.
	per 1,000.	per 1,000.
Whites	16·2	12·5
Coloured	33·6	28·3
Chinese	22·54	24·4

The increased mortality amongst the Chinese was occasioned by the greater number of deaths from plague.

PREVALENCE OF SICKNESS IN THE DIFFERENT SEASONS
OF THE YEAR, AND GENERAL CHARACTER AS TO THE
MILDNESS OR SEVERITY OF THE DISEASES PREVAILING.

HONG
KONG,
1899.

Small-pox.—This disease was much less prevalent than in 1898, only 69 cases having been notified, as compared with 199 in the previous year, as usual the greater number of cases occurring in the winter months. At no time was the disease epidemic.

Plague.—Information was obtained of the presence of some sporadic cases of plague in the neighbourhood of Canton at the commencement of the year.

In the month of February the Government was informed of the presence of an outbreak of plague at Tainan in Formosa.

The Sanitary Board was informed on the 16th March of the presence of sporadic cases of plague at Pakhoi.

On the 22nd March the Sanitary Board, on account of the receipt of two letters from Her Britannic Majesty's Consul at Tainan, Formosa, reporting an increase of cases of bubonic plague in the Tainan Prefecture in the week ending 13th March, advised the Government to proclaim Tai Wan Foo and its Port, Anping, as places at which Bubonic Plague prevails.

Rats and Plague.—In February the Captain Superintendent of Police, the Medical Officer of Health and the Government Analyst were appointed a Commission for the purpose of exterminating rats. A grant of \$200 was made for traps, poison, and other requisites. Experiments were made to see if it were possible to attract rats into cellars by means of food in order that poison might afterwards be used. It was found that the animals had so much garbage in the streets and lanes, that the choice food placed in cellars had no attraction. Traps were set in every house in West Point—a district in which plague is invariably bad whenever the Colony is infected. After two months no more rats could be caught in West Point, and householders said that no more were to be seen. Simultaneously with the operations in this district, traps were set in Kowloon, and in the Central District. Altogether about 1,000 rats were caught. A large number, in addition, were caught by the Chinese, many of whom bought traps and put themselves to considerable trouble to exterminate the animals.

The Commission was dissolved in May, as the Medical Officer of Health stated that it appeared more probable that rats caught plague from man rather than that men were infected through rats. Although the West Point District had probably never before been so free from rats as it was just before plague appeared, the epidemic there was one of the worst experienced.

HONG
KONG,
1899.

On account of the increase in the number of cases notified in the month of March, steps were taken by the Sanitary Board at its meeting on the 3rd March for the enforcement of the provisions of the cleansing and lime-washing bye-laws in the central parts of the City.

Early in April, on account of the prevalence of the disease in No. 9 Health District, the Board declared it infected.

Prompt measures were immediately taken to deal with the disease.

The disease became much more prevalent in May; at the end of the month the Branch Plague Hospital was reopened for the reception of plague patients.

Early in June a report was made to the Government of the reappearance of plague at Canton.

On the 17th June Health Districts Nos. 4, 5, 6, 7, 8, and 10 were declared to be infected.

Information of the presence of plague at Amoy was obtained in the middle of June.

The Sanitary Board on the 24th June advised that Amoy be declared infected with plague.

Health Districts Nos. 11 and 12 (Kowloon Peninsula) were declared infected with the disease on 30th June.

Amoy was declared free from plague on 17th of August.

It was not until the end of September that plague ceased to be prevalent. On the 12th October the Sanitary Board reported that clean Bills of Health might then be issued as no cases had been notified for the previous ten days.

In all 1,486 cases of plague were notified during the year, with 1,434 deaths.

The following table gives the number of cases reported in each month for the years 1898 and 1899 :—

—				1898.	1899.
January	...	...	...	9	1
February	...	...	...	67	2
March	...	...	...	137	25
April	...	...	...	468	101
May	...	...	...	534	421
June	...	...	...	92	514
July	...	...	...	7	263
August	...	...	...	2	86
September	...	...	...	1	57
October	...	...	...	2	4
November	...	...	...	0	1
December	...	...	...	1	11
Total ...				1,320	1,486

From July, 1898, to the end of February, 1899, only sixteen cases occurred; the disease during this time was quiescent; the marked recurrence of cases, however, in houses previously infected shows that the bacilli are but dormant, and in the ill-ventilated, badly lighted, and overcrowded Chinese dwellings which exist in this Colony only require certain atmospheric conditions to favour their growth and spread.

HONG
KONG,
1899.

During 1899 out of a total of 7,159 houses in the city of Victoria there were 709 houses in which cases of plague occurred; in 80 of these 709 houses cases of plague had occurred in 1898, so that 11 per cent. of the cases were in houses previously infected in the 1898 outbreak.

The great increase of cases, which in epidemic years has always occurred in the spring, proves that in these years a fresh introduction of plague bacilli occurs; information was obtained of the presence of sporadic cases in the district round Canton at the commencement of the year; an outbreak also occurred at Wuchow at the beginning of March, and news was obtained of the presence of cases at Pakhoi on the 16th of March. It also appears that the great influx of Chinese at the annual race meeting, which is always held towards the end of February, may be one means whereby these germs are introduced afresh into this Colony.

This year vigorous steps have been taken to prevent this influx of Chinese; a different system has also been established to exterminate the rats.

The Chinese are paid 2 cents a head for each rat, the Sanitary Inspectors of the various Health Districts collecting them on their morning rounds; by this means 300 rats a week are now being destroyed.

It will be seen that the disease did not reach its maximum until June, quite a month later than was the case in the previous year; it is worthy of note that the mean monthly temperature was considerably less in the first six months of the year than in 1898, as the following figures will show:—

				Mean monthly temperature.	
				1898.	1899.
January	...	...	...	60·1	59·0
February	...	...	...	62·7	59·6
March	...	...	...	64·3	64·9
April	...	...	...	69·2	69·9
May	...	...	...	78·4	77·6
June	...	...	...	81·6	79·7

HONG
KONG,
1899.

A considerable diminution of the number of cases followed the month of the maximum mean temperature, viz., July.

This is the first time that the disease has been epidemic in two successive years.

Fortunately, very few Europeans were attacked this year.

One of the islands that were annexed this year, viz., Cheung Chau, suffered from an outbreak in the months of April and May; an epidemic of what appears to have been swine-fever prevailed amongst the pigs on this island prior to the attack in man.

Rinderpest this year was very prevalent amongst the cattle in the Colony.

Early in March it broke out in a dairy at Wanchai and rapidly spread to a dairy at Causeway Bay.

Kowloon was infected with this disease towards the end of April; in May it occurred in a large dairy at Wongneichung, and in September there were a few cases at the Pokfulum Dairy Farm.

Enteric fever.—There were 59 cases reported during the year, an increase of 7 as compared with 1898.

Cholera.—For the third year in succession we were practically free from this class of disease; undoubtedly the habit of the Chinese in drinking their water boiled prevents the spread of this disease, should it be introduced.

Malarial fevers and Beri-beri were much more prevalent than in the previous year.

Beri-beri is very common amongst the Chinese; it does not, however, become epidemic; it is rarely that more than one case occurs in the same house, so that the disease as it now exists is not very infectious.

In order to obtain more information concerning this disease it would, I think, be advisable to include it amongst the list of notifiable diseases.

The following table gives the number of cases of infectious diseases notified during the year :—

Diseases.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Bubonic Fever	1	2	25	101	421	514	263	86	57	4	1	11	1,486
Small-pox	5	14	11	17	10	5	1	—	—	1	—	5	69
Enteric Fever	2	6	7	4	5	1	4	5	7	6	8	4	59
Diphtheria	3	—	2	1	—	—	—	—	—	—	2	1	9
Puerperal Fever	1	1	—	3	—	—	—	3	1	1	2	—	12
Scarlet Fever	1	1	—	—	—	—	—	—	—	—	—	—	3
Total...													1,637

HONG
KONG,
1899.
—

RELATIVE MORTALITY IN THE DIFFERENT SEASONS.

From the following table it will be seen that the months of May and June were the most fatal; the cause of this mortality was the greater prevalence of plague during these months.

POPULATION.—Non-Chinese, 15,820. Chinese, 243,490.

Deaths.

Month.	Non-Chinese.	Rate per 1,000.	Chinese.	Rate per 1,000.	Total Deaths.	Total Deaths excluding Plague and Small-pox.
January ...	18	12·13	304	16·78	322	320
February ...	20		347		367	359
March ...	10		371		381	351
April ...	16	17·44	429	34·21	445	344
May ...	22		808		830	428
June ...	31		846		877	402
July ...	29	17·44	596	24·67	625	345
August ...	16		457		473	378
September	24		449		473	415
October ...	15	13·90	432	21·89	447	445
November	13		440		453	449
December...	27		461		488	476
Total ...	241	—	5,940	—	6,181	4,712

HONG
KONG,
1899.

RETURNS of DISEASES and DEATHS in 1899 at GOVERNMENT
CIVIL HOSPITAL, TUNG WAH HOSPITAL, and
VICTORIA GAOL HOSPITAL, HONG KONG.

Government Civil Hospital.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES—			
Smallpox	2	—	
Measles	3	—	
Typhus	—	—	
Plague... ..	23	3	
Dengue	—	—	
Influenza	32	—	
Diphtheria	6	2	
Febricula	6	—	
Enteric Fever	33	11	
Cholera	—	—	
Dysentery	47	2	
Beri-beri	44	7	
Malarial Fever—			
(a.) Intermittent	367	—	
(b.) Remittent	102	3	
(c.) Pernicious R.	—	—	
Erysipelas	—	—	
Pyæmia	4	3	
Septicæmia	—	—	

Government Civil Hospital—cont.

HONG
KONG,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES— <i>cont.</i>			
Tetanus	—	—	
Tubercle	2	—	
Leprosy—			
(a.) Tubercular	—	—	
(b.) Anæsthetic	—	—	
Yaws	—	—	
Syphilis—			
(a.) Primary	63	—	
(b.) Secondary	106	1	
(c.) Inherited	3	2	
Gonorrhœa	54	—	
Hydrophobia	—	—	
Scurvy	—	—	
Alcoholism	—	—	
Delirium Tremens	75	4	
Rheumatism	94	—	
Rheumatic Fever	19	—	
Gout	1	—	
New Growth, non-malignant	7	—	
„ malignant	14	1	
Anæmia	8	2	
Diabetes mellitus	5	—	
„ insipidus	—	—	
Debility	25	—	

Government Civil Hospital—cont.

HONG
KONG,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES—			
DISEASES OF THE NERVOUS SYSTEM—			
Sub-section 1—			
Diseases of the Nerves—			
Neuritis	10	—	
Meningitis	2	2	
Myelitis	1	—	
Hydrocephalus	—	—	
Encephalitis	3	2	
Abscess of Brain	—	—	
Congestion of Brain... ..	—	—	
Sub-section 2—			
Functional Nervous Disorders—			
Apoplexy	2	1	
Paralysis	13	—	
Chorea	—	—	
Epilepsy	6	—	
Neuralgia	10	—	
Hysteria	3	—	
Sub-section 3—			
Mental Diseases—			
Idiocy	—	—	
Mania	16	—	
Melancholia	12	—	
Dementia	47	—	
Delusional Insanity	3	—	

HONG
KONG,
1899.*Government Civil Hospital—cont.*

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES— <i>cont.</i>			
Diseases of the Eye	46	—	
" " Ear	9	—	
" " Nose	1	—	
" " Circulatory system	20	3	
" " Respiratory system	165	25	
" " Digestive system ...	210	6	
" " Lymphatic system	76	—	
" " Urinary system ...	28	9	
" " Generative system—			
Male organs ...	59	—	
Female " ...	67	—	
" " Organs of Locomotion.	113	1	
" " Cellular tissue ...	48	—	
" " Skin	37	1	
Injuries, General	—	—	
" Local	389	16	
Malformations	3	—	
Poisons	12	—	
Parasites	39	—	
Under observation	63	—	
<hr/>			
Total for Year ...	2,658	107	

Surgical operations : cases, 234 ; deaths, 6.

J. M. ATKINSON,
Principal Civil Medical Officer.

*Tung Wah Hospital.*HONG
KONG,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES—			
Smallpox	4	1	
Measles	—	—	
Typhus	—	—	
Plague... ..	468	75	
Dengue	—	—	
Influenza	15	—	
Diphtheria	1	—	
Febricula	—	—	
Enteric Fever	7	5	
Cholera	—	—	
Dysentery	45	25	
Beri-beri	279	123	
Malarial Fever—			
(a.) Intermittent	72	2	
(b.) Remittent	226	49	
(c.) Pernicious R.	7	7	
Erysipelas	2	—	
Pyæmia	2	2	
Septicæmia	16	16	
Tetanus	6	6	
Tubercle	8	7	
Leprosy—			
(a.) Tubercular	—	—	
(b.) Anæsthetic	—	—	
Yaws	—	—	

*Tung Wah Hospital—cont.*HONG
KONG,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES— <i>cont.</i>			
Syphilis—			
(a.) Primary	1	—	
(b.) Secondary	40	6	
(c.) Inherited	—	—	
Gonorrhœa	—	—	
Hydrophobia	1	1	
Scurvy	—	—	
Alcoholism	2	—	
Delirium Tremens	—	—	
Rheumatism	45	—	
Rheumatic Fever	—	—	
Gout	—	—	
New Growth, non-malignant	1	—	
„ malignant	10	4	
Anæmia	21	8	
Diabetes mellitus	—	—	
„ insipidus	—	—	
Debility	39	19	
LOCAL DISEASES—			
DISEASES OF THE NERVOUS SYSTEM—			
Sub-section 1—			
Diseases of the Nerves—			
Neuritis	—	—	
Meningitis	7	6	
Myelitis	1	—	

*Tung Wah Hospital—cont.*HONG
KONG,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES— <i>cont.</i>			
DISEASES OF THE NERVOUS SYSTEM — <i>cont.</i>			
Sub-section 1— <i>cont.</i>			
Hydrocephalus	—	—	
Encephalitis	—	—	
Abscess of brain	—	—	
Congestion of brain	—	—	
Sub-section 2—			
Functional Nervous Disorders—			
Apoplexy	13	11	
Paralysis	35	22	
Chorea	—	—	
Epilepsy	6	2	
Neuralgia	—	—	
Hysteria	—	—	
Sub-section 3—			
Mental Diseases—			
Idiocy	—	—	
Mania	2	—	
Melancholia	1	—	
Dementia	2	—	
Delusional insanity	—	—	
Diseases of the Eye	22	—	
“ “ Ear	—	—	
“ “ Nose	—	—	
“ “ Circulatory system	78	54	

Tung Wah Hospital—cont.

HONG
KONG,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES— <i>cont.</i>			
Diseases of the Respiratory system	457	293	
„ „ Digestive system ...	176	63	
„ „ Lymphatic system	10	—	
„ „ Urinary system ...	39	22	
„ „ Generative system—			
„ „ Male organs ...	11	—	
„ „ Female „ ...	7	1	
„ „ Organs of Locomotion.	33	7	
„ „ Cellular Tissue ...	103	7	
„ „ Skin	73	—	
Injuries, General	1	—	
„ Local	145	7	
Malformations	—	—	
Poisons	1	1	
Parasites	—	—	
Under observation	—	—	
Total for Year ...	2,541	852	

Surgical operations : cases 42 ; deaths, 1.

JAMES A. LOWSON,

Visiting Surgeon.

*Victoria Gaol Hospital.*HONG
KONG,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES—			
Smallpox	—	—	
Measles	—	—	
Typhus	—	—	
Plague	1	—	
Dengue	—	—	
Influenza	4	—	
Diphtheria	—	—	
Febricula	—	—	
Enteric Fever	2	—	
Cholera	—	—	
Dysentery	18	—	
Beri-beri	2	1	
Malarial Fever—			
(a.) Intermittent	7	—	
(b.) Remittent	63	—	
(c.) Pernicious R.	—	—	
Erysipelas	—	—	
Pyæmia	—	—	
Septicæmia	—	—	
Tetanus	—	—	
Tubercle	—	—	
Leprosy—			
(a.) Tubercular	3	—	
(b.) Anæsthetic	—	—	
Yaws	—	—	

HONG
KONG,
1899.*Victoria Gaol Hospital—cont.*

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths	
GENERAL DISEASES— <i>cont.</i>			
Syphilis—			
(a.) Primary	4	—	
(b.) Secondary	—	—	
(c.) Tertiary	4	—	
Gonorrhœa	3	—	
Hydrophobia... ..	—	—	
Scurvy	—	—	
Alcoholism	2	—	
Delirium Tremens	—	—	
Rheumatism	4	—	
Rheumatic Fever	—	—	
Gout	—	—	
New Growth, non-malignant	—	—	
„ malignant	—	—	
Anæmia	4	—	
Diabetes mellitus	—	—	
„ insipidus	—	—	
Debility	81	—	
LOCAL DISEASES—			
DISEASES OF THE NERVOUS SYSTEM—			
Sub-section 1.			
Diseases of the Nerves—			
Neuritis	—	—	
Meningitis	—	—	
Myelitis	—	—	

Victoria Gaol Hospital—cont.

HONG
KONG,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES— <i>cont.</i>			
DISEASES OF THE NERVOUS SYSTEM — <i>cont.</i>			
Sub-section 1— <i>cont.</i>			
Hydrocephalus	—	—	
Encephalitis	—	—	
Abscess of brain	—	—	
Congestion of brain	—	—	
Sub-section 2—			
Functional Nervous Disorders—			
Apoplexy	2	—	
Paralysis	—	—	
Chorea	—	—	
Epilepsy	—	—	
Neuralgia	—	—	
Hysteria	—	—	
Sub-section 3—			
Mental Diseases—			
Idiocy	1	—	
Mania	—	—	
Melancholia	—	—	
Dementia	2	—	
Delusional Insanity	1	—	
Diseases of the Eye	2	—	
„ „ Ear	3	—	
„ „ Nose	—	—	
„ „ Circulatory system	13	2	

HONG
KONG,
1899.

Victoria Gaol Hospital—cont.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES— <i>cont.</i>			
Diseases of the Respiratory system	17	1	
" " Digestive system ...	78	1	
" " Lymphatic system...	18	—	
" " Urinary system ...	8	—	
" " Generative system —	4	—	
" " Male organs ...	—	—	
" " Female " ...	—	—	
" " Organs of Locomotion.	1	—	
" " Cellular Tissue ...	51	—	
" " Skin... 	20	—	
Injuries, General 	—	—	
" Local	20	—	
Malformations	—	—	
Poisons	—	—	
Parasites... 	1	—	
Under observation 	59	—	
Total for Year ...	503	5	

<i>Other Deaths:</i> Suicide by hanging	...	...	...	...	1
Executions	...	...	...	...	2
Total	...	...	...	...	3

JAMES A. LOWSON,
Acting Medical Officer.

HONG KONG.

REPORTS OF THE MEDICAL OFFICER OF
HEALTH, THE SANITARY SURVEYOR, AND
THE COLONIAL VETERINARY SURGEON
FOR THE YEAR 1899.

(Extract.)

POPULATION.

The population of the Colony at the census taken in 1891 was found to be 221,441, and at the census taken in 1897 it was 248,880.

The following is the estimated population to the middle of 1899:—

Non-Chinese population	...	...	..	8,915
Chinese population:—				
City of Victoria, including Peak and Stonecutters' Island	...	...	...	168,260
Villages of Hong Kong and Kowloon	...	...	...	40,530
Floating population	...	...	...	34,700
Total Chinese population	...	—	—	243,490
Army	...	...	...	3,520
Navy	...	..	...	3,385
Total population of the Colony				259,310

The TOTAL STRENGTH OF TROOPS in garrison on June 30th, 1899, was 82 British officers and 1,651 British warrant officers, N.C.O.'s, and men, with 21 Indian officers, and 1,344 Indian warrant officers, N.C.O.'s, and men, making a total of 3,098, as compared with 2,781 in 1898, and 2,577 in 1897. There were in addition 89 British women and 148 British children and also 82 Asiatic women and 103 Asiatic children on the strength.

HONG KONG, The total strength of the British fleet on the China station, on 1899. June 30th, 1899, was 7,373 British officers and men, 364 Chinese servants and 1 Japanese servant. In 1898 there were 7,497 British officers and men on the station. At the census taken in January, 1897, the actual number of officers and men of Her Majesty's Navy present in the Colony was 2,268, and in view of the considerable increase in the numerical strength of the fleet since that date, the estimated number resident here (ashore and afloat) in 1899 is put at 3,385.

The Chinese boat population of the Colony has been estimated to the middle of the year to have been 34,700; this figure cannot, however, be relied upon as necessarily accurate, for, owing to an error in the census returns for 1891, pointed out in my annual report for last year, a correct basis for calculating this population is wanting. It would appear, however, that there has been a steady increase in the floating population, and at the census taken in 1897 it was found to number 33,275.

The number of registered boats belonging to the port in 1899 was as follow:—

Fishing and trading junks	...	...	...	6,405
Cargo boats, lighters, sampans, &c.	...	...	...	4,480
				<hr/>
Total	...	...	...	10,885
				<hr/>

The number of boats licensed in 1898 was 10,150, and in 1897 was 9,954.

The population of the Colony is classified primarily into Chinese and non-Chinese, the former being greatly in the majority. The non-Chinese comprise a white population of 13,060, of whom 6,155 are civilians and the remainder belong to the army or the navy. The coloured races number 2,760 and comprise East Indians, Malays, Filipinos, and a few Africans.

The white civilian population was shown at the 1897 census to consist of 2,374 British, 2,276 Portuguese, and a sprinkling of Americans, Germans, French, and other Europeans.

The population is essentially a male adult one, as no less than 70·9 per cent. of the Chinese population and 58·6 per cent. of the non-Chinese population are males, while more than half the population (55·9 per cent. of the Chinese and 52·6 per cent. of the non-Chinese) are between the ages of 20 and 45. The proportion of the population of Great Britain between these ages is only 33·8 per cent.

The following table gives the acreage and total population of Hong Kong each health district of the city, and the number of persons per acre. 1899.

Health District.	Total Acreage.	Built - over area (including streets).	Chinese Houses.	Non-Chinese Houses.*	Chinese Population.	Non-Chinese Population (including troops).	Persons per acre on built over areas.
1	531	119	659	65	8,340	430	73.8
2	243	125	827	37	22,260	<div> <div>1,607 troops</div> <div>1,185</div> </div>	200.4
3	164	124	31	349	4,300	1,930	
4	56	49	911	173	23,870	1,960	527.1
5	29	27	953	46	22,270	380	838.8
6	30	23	824	5	17,440	420	776.5
7	36	28	740	5	16,490	170	595.0
8	49	38	734	5	19,240	150	510.2
9	44	43	1,035	20	24,800	170	580.7
10	252	99	455	47	7,550	300	79.3
	1,434	675	7,169	752	166,560	8,682	259.6

* Exclusive of Barracks.

There are also some 1,700 Chinese servants, etc., resident at the Peak.

From this table it will be seen that Nos. 5 and 6 Health Districts, which are situated in the centre of the city, show acute surface crowding, while Districts 7, 9, 4, and 8 are almost as densely crowded. Owing to the conformation of the island the only possible remedy for this acute congestion is the provision of more ready means of access to the outlying districts of the city, and it is to be hoped that the Government will see their way, at no distant date, to provide tramways to East Point and the Shauiwan Road with nominal fares for workmen, thus offering an inducement to the Chinese to reside in these suburbs.

The density of population of the City of Victoria as a whole, that is to say, including all the outlying vacant lands and the villages in No. 1 Health District, the Public Gardens in No. 3

HONG KONG, Health District, and all the unoccupied hill-side below the city limit of about 450 feet above high-water mark, is 122 persons per acre. In 1889 the average density of population in the administrative County of London was 49 persons per acre.

BIRTHS.

The births registered during the year were as follows :—

	Males.	Females.	Total.
Chinese	541	311	852
Non-Chinese—			
White	107	97	204
Coloured... ..	42	34	76
Total	690	442	1,132

This is equal to a general birth-rate of 4·3 per 1,000, as compared with 4·7 per 1,000 during 1898, and 5·5 per 1,000 during 1897. The birth-rate among the non-Chinese community alone was 17·7 per 1,000, as compared with 15·9 per 1,000 during 1898, and 17·7 per 1,000 during 1897, so that the deficiency in the birth-rate has been among the Chinese community only. The nationalities of the non-Chinese parents were as follows:—British 113, Portuguese 81, Indian 64, German 10, Japanese 7, Malays and Filipinos 5. The remarkable preponderance of male births over female births among the non-Chinese population has not been so pronounced during the past year as in 1898, but it still stands at 113 to 100, as compared with 136 to 100 during 1898 (128 to 100 among the white population only) and 104 only to 100 in Great Britain.

The number of Chinese births registered does not, however, give an accurate record of the number of births which have occurred in the Colony, for many of the infants that die during the first month or so of life remain unregistered, although their deaths must be registered to obtain the necessary burial orders. It has been customary, therefore, to add to the registered births the number of infants of one month old and under that die in the various convents, or are found by the Police in the streets or in the harbour. This number during 1899 was 251 males and 398 females, making a total of 649, and the addition of these figures to the registered Chinese births gives a total of 1,501 births for the year. This is equal to a birth-rate of 6·2 per 1,000 among the Chinese population only, while the general birth-rate thus becomes 6·8 per 1,000.

The proportion of male births to female births among the Chinese population was as 111 to 100, as compared with 117 to 100 during the previous year.

DEATHS.

HONG KONG,
1899.

The total number of deaths registered during the year was 6,181, as compared with 5,674 during 1898, and 4,688 during 1897. The death-rate for 1899 was therefore 23·8 per 1,000, as compared with 22·3 per 1,000 during the preceding year, and an average of 23·6 per 1,000 during the previous five years. These deaths include no less than 1,434 from bubonic fever (plague).

The following table gives the death-rates during the past twenty years, inclusive and exclusive of deaths from bubonic plague, and exclusive also of the military and navy populations and deaths, as until the last five years these latter populations were not ascertained :—

Year.	Death-rate.	Including Plague.	Excluding Plague.
1880	28·71	—	—
1881	24·07		
1882	26·11		
1883	30·04		
1884	26·91		
1885	32·36		
1886	31·79		
1887	28·59		
1888	31·72		
1889	23·64		
1890	23·19		
1891	23·80		
1892	20·70		
1893	22·70		
1894	—	30·37	19·85
1895	—	21·89	21·74
1896	—	24·25	19·79
1897	—	19·13	19·05
1898	—	22·71	17·98
1899	—	24·33	18·65

All the above death-rates exclude the military and naval populations and deaths.

HONG KONG, The total number of deaths among the Chinese was 5,941, 1899. which is equal to a death-rate of 24·4 per 1,000.

The deaths registered among the non-Chinese community numbered 240, of which 200 were from the civil population (including 21 deaths from bubonic fever), 35 from the army, and 5 from the navy.

The nationalities of these deaths were as follows :—British and American 88, German 8, French 7, Norwegian 4, Austrian 1, Italian 1, Portuguese 53, Indian 53, Japanese 16, Malays and Filipinos 9. The total death-rate among the white races was therefore 12·4 per 1,000, as compared with 16·2 per 1,000 in 1898, and among the coloured races it was 28·3 per 1,000, as compared with 33·6 per 1,000 in the previous year.

The following table gives the causes of the 35 deaths occurring in the army :—

Soldiers.	No.	Wives and Children.	No.
Bubonic Fever (Plague) ...	1	Whooping Cough	2
Remittent Fever	5	Inanition	4
Intermittent Fever	1	Premature Birth	1
Heat Apoplexy	3	Convulsions	4
Meningitis	1	Congenital Malformation of Heart	1
Fracture of Skull	3	Congenital Syphilis	1
Gunshot Wounds	1		
Drowning	1		
Alcoholism	1		
Rupture of Heart (overstrain)	1		
Phthisis	2		
Pneumonia	1		
Enteritis	1		

The average age at death of these British soldiers was 25½ years.

There is a considerable reduction in the death-rate from Malarial diseases as compared with the previous year, but this rate is still high, especially when it is noted that only one death occurred among the European-born civilian population from Malarial Fever, while five deaths occurred among the British

soldiers (the other man being a private of the Hong Kong HONG KONG,
1899. Regiment and hence an Asiatic), and yet the European-born civilians number more than twice as many as the British-born troops.

The death from bubonic fever was not incurred in the execution of Plague duty, but infection must have been contracted by the man (a Fusilier) in some Chinese house of entertainment.

The five deaths occurring in the China Squadron which were registered in this Colony during the year were as follows :—

Small-pox (H.M.S. "Undaunted")	...	...	1
Heart disease (H.M.S. "Centurion")	...	...	1
Articular Rheumatism (H.M.S. "Bonaventure")	...	...	1
Septicæmia (H.M.S. "Orlando")	...	...	1
Fracture of Skull (H.M.S. "Barfleur")	...	...	1

The average age at death was 24 years.

Seven deaths occurred in persons, other than Chinese, employed by Foreign Navies, as follows :—

Enteric Fever (H.I.G.M.S. "Gefion")	...	...	1
" (U.S.S. "Bennington")	...	...	1
Heart disease (U.S.S. "Charleston")	...	...	1
" (H.I.I.M.S. "Carlo Alberto")	...	...	1
Injuries (H.I.G.M.S. "Kaiser")	...	...	1
" (U.S.S. "Iris")	...	...	1
Fracture of Skull (U.S.S. "Concord")	...	...	1

The deaths occurring in the Mercantile Marine numbered 34 and were composed as follows :—

Disease.	No.	Disease.	No.
Enteric Fever	3	Asthma	1
Small-pox	1	Peritonitis	1
Bubonic Fever (Plague) ...	1	Malignant Disease of Liver...	1
Septicæmia	1	Dysentery	1
Beri-Beri	3	Sprue	1
Fractured Skull	3	Bright's Disease	3
Drowning	2	Glycosuria	1
Scalds	1	Pernicious Anæmia	1
Apoplexy	1	Exhaustion	1
Phthisis	4	Debility	1
Pneumonia	2		

HONG KONG,
1899.

The death from bubonic fever occurred in a Portuguese watchman employed on board the Canton steamer "Powan." Two of the deaths from beri-beri were in Indians and the third was a Japanese.

The total number of deaths therefore which occurred among the non-Chinese resident civil community was 159 during the preceding year; allowing 455 for the non-Chinese floating population, this is equal to a death-rate of 18·8 per 1,000.

The principal causes of death among the non-Chinese civil community were as follows :—

Disease.	No.	Disease.	No.
Bubonic Fever (Plague) ...	19	Bronchitis	14
Small-pox	1	Heart Disease	5
Typhoid Fever	6	Bright's Disease	8
Whooping Cough	2	Apoplexy	4
Remittent Fever	5	Convulsions	7
Beri-Beri	2	Delirium Tremens	3
Phthisis	18	Drowning	1
Pneumonia	4		

The nationalities of the 19 persons who died from bubonic fever were as follows :—Indian 8, Portuguese 6, Japanese 2, Austrian 1, German 1, British 1.

UNCERTIFIED DEATHS.

During the year there were 463 deaths of Chinese who were not attended by a medical man, as compared with 641 during the previous year, and in every case the relatives of the deceased have been interviewed and the dead bodies inspected, with the result that no less than 78 deaths from bubonic fever (Plague) were thus discovered and the premises disinfected and cleansed in the usual course.

This work of inspection of dead bodies could well be done by a Chinese doctor trained in Western medicine, as I have suggested in previous annual reports, while there are many other functions, especially in the direction of the intelligent propagation of our sanitary laws among the Chinese, which such an officer could perform with great advantage to the sanitary welfare of the Colony.

AGE DISTRIBUTION OF DEATHS.

HONG KONG,
1899.

The death-rate among the infant population is still most alarmingly high, for no less than 21·2 per cent. of the total deaths occurred in infants under one year of age. The infant death-rate among the non-Chinese community during the year has been 128 per 1,000 as compared with 139·9 during 1898 and 120 during 1897. Among the Chinese population the rate was 848 per 1,000 while the rate in recent years has been as follows:—

1898	...	...	630 per 1,000
1897	...	...	593 " "
1896	...	...	745 " "
1895	...	...	759 " "

The infant death-rate among the Chinese during the past year has therefore been higher than for several years past—a fact which is far from gratifying.

The following is a table of the age-periods at which the several deaths occurred:—

—	Under 1 month.	1-12 months.	1-5 years.	5-15 years.	15-25 years.	25-45 years.	45-60 years.	60 years and over.	Age unknown	Totals.
Chinese ...	676	599	701	489	653	1,489	713	612	9	5,941
Non-Chinese	10	25	19	10	46	87	26	16	1	240
Totals ...	686	624	720	499	699	1,576	739	628	10	6,181
Percentages	11·1	10·0	11·7	8·1	11·3	25·5	11·9	10·2	0·2	—

The year appears to have been a particularly unhealthy one for children, as there is an increase of almost 14 per cent. upon the previous year in the proportion of deaths under the age of 5 years.

DEATHS AMONG THE CHINESE.

Chest Diseases.

The total number of deaths among the Chinese from respiratory diseases was 1,149 or 19·3 per cent. of the total deaths as compared with 1,221 deaths or 22·6 per cent. during the previous year. This represents a death-rate from these diseases of 4·7 per 1,000 as compared with 5·1 during 1898.

HONG KONG, 1899. As in former years the death-rate from these causes was far heavier among the boat population than among the land population, being 6·4 per 1,000 among the former and 4·4 per 1,000 among the latter. No less than 61·5 per cent. of these deaths are from phthisis, which disease is intimately associated with overcrowded and insanitary dwellings.

Nervous Diseases.

The deaths recorded under this heading number 1,021, and no less than 709 of these or 69·4 per cent. occurred in infants under one year of age, the causes of death being Tetanus, Trismus, and allied disorders of a convulsive type. In respect of these diseases, which are induced *inter alia* by insanitary surroundings, the past year shows some retrograde movement, as the number of deaths from these diseases during the past five years has been as follows :—

1895	...	...	...	1,107
1896	...	...	...	711
1897	...	...	...	655
1898	...	...	...	572
1899	...	...	...	709

I am inclined to think, however, that the epidemic of bubonic fever may be responsible for not a few of these deaths which were recorded as due to convulsions, for it is no doubt quite possible to overlook the evidences of bubonic fever in infants of such tender age. That the disease may occur in infants is shown by the fact that during the past year 15 infants of less than one month old, and 20 infants between the ages of one and twelve months proved, on post-mortem examination, to have died of bubonic fever. Almost the whole of the infants whose deaths are recorded as due to these convulsive diseases are left at one or other of the various convents in a moribund condition, and are interred without post-mortem examination.

Malarial Diseases.

The total number of deaths among the Chinese from malarial diseases was 532, as compared with 506 during the previous year : this is equal to a death-rate from this cause alone of 2·19 per 1,000. The death-rate among the boat population alone from this cause was 1·8 per 1,000, being less than the mortality among the land population, which is contrary to what has obtained in former years.

There were 197 deaths from beri-beri during the year, which number is somewhat in excess of the average for former years.

The increase occurred during the latter end of the year, and although not amounting to an epidemic gave cause for grave

anxiety for a time. The following table shows the number of **HONG KONG**, deaths that occurred among the Chinese during each month of 1899. the year:—

Month.				No.	Month.				No.
January	...	...	...	12	July	...	...	...	15
February	...	...	...	10	August	...	...	...	18
March	...	...	...	11	September	...	...	...	16
April	...	...	...	11	October	...	...	...	24
May	...	...	...	11	November	...	...	...	29
June	...	...	...	15	December	...	...	...	25

The poorest quarters of the city were most affected with the disease, and deaths occurred in new as well as in old houses, and in houses fronting wide streets as well as in those in narrow lanes, while several deaths occurred in mat sheds put up for the temporary accommodation of workmen engaged in building operations.

In the Appendix* will be found the addresses of all those Chinese who died from this disease during the year (other than imported cases or those occurring on boats in the harbour), and from this table it will be seen that in no case did a second death occur in any house, although no disinfection of the premises was attempted.

A small outbreak of a disease which was considered to be beri-beri occurred, at the latter end of the year, in the Berlin Foundling Home. The following is a brief account of the outbreak:—

It was stated that the Blind Home, a one-storey building, which contained about 16 blind Chinese children, had had cases of beri-beri since July, and that the children from the Blind Home attended divine worship at the Berlin Foundling House. This latter house contained 102 children and girls up to the age of 16 or 17 years; and at the latter end of November, two of the young children, both of whom were being surgically dressed—one for an affection of the eyes and the other for some skin affection—developed symptoms of beri-beri. Within a couple of days 50 to 60 other children were attacked with similar symptoms. On December 7th, 69 school children, all of whom were suffering from this disease, with six big girls (who were in good health) to assist in looking after them, were sent to Macao, leaving 27

* Not reprinted.

HONG KONG, healthy children in the house. Two of the children died in 1899. Macao shortly after their arrival there, but the remainder rapidly improved in health.

The main symptoms in these cases were dropsy and marked heart weakness, with, in some cases, a staggering gait and loss of reflex, but no marked evidences of paralysis, and it was suggested that the disease might be epidemic dropsy, but as many of the characteristic symptoms of this latter disease, notably the rash, the continued fever, and the evidences of intestinal irritation, were also absent, it seemed more reasonable to suppose that the outbreak was one of beri-beri, especially as two or three of the patients who were seen by various medical men in the Colony were undoubtedly suffering from beri-beri.

The children who were attacked were all between the ages of four and seven years, and all of them slept in a series of adjacent ground floor rooms. These rooms are thoroughly well lit and ventilated and have close-boarded floors which are painted. Some children who slept on ground floor rooms in another part of the building were not attacked, nor were any of the girls who slept upstairs. No European cases of the disease occurred.

The children's dietary was a most generous one, comprising rice, eggs, fish (fresh and salt on alternate days), meat (beef or pork) at every evening meal and thrice a week with the morning meal.

The special points about the outbreak seem to be the unusually early age of the patients (all between four and seven years), the absence of overcrowding, the abundant lighting and ventilation of the premises, and the liberal dietary.

The 27 healthy children left in the house continued in good health after the removal of the sick children to Macao.

Infectious Diseases.

	January.	February.	March.	April.	May	June.	July.	August.	September.	October.	November.	December.	Totals.
Bubonic fever	1	2	25	101	421	514	263	86	57	4	1	11	1,486
Small-pox ...	5	14	11	17	10	5	1	—	—	1	—	5	69
Enteric fever	2	6	7	4	5	1	4	5	7	6	8	4	59
Diphtheria ...	3	—	2	1	—	—	—	—	—	—	2	1	9
Puerperal fever	1	1	—	3	—	—	—	3	1	1	2	—	12
Scarlet fever	1	1	—	—	—	—	—	—	—	—	—	—	2
									Total cases ...	...	...	...	1,637

HONG KONG, 1899. Of the 151 cases other than bubonic fever no less than 55 are known to have been imported, while in not a few cases it was impossible to discover whence they had come, as the disease was not discovered until the patients had died and the bodies been deserted by the other occupants of the house. Twenty-six of the imported cases were small-pox, 28 were enteric fever, and one was diphtheria.

There is still no systematic medical inspection of vessels immediately on arrival in the port, and persons suffering from infectious disease may land in the Colony with impunity provided that they are unaware (or refuse to admit that they are aware) of the infectious nature of the disease from which they are suffering.

Bubonic Fever.

The total number of cases of bubonic fever reported during the year was 1,486, and the total number of deaths was 1,428; this is equal to a case of mortality of 96·1 per cent., as compared with a mortality of 88·2 per cent. in 1898 and 89·5 per cent. in 1896. I am inclined to think, however, that this increased mortality is more apparent than real, and that it was occasioned by the fact that a larger number of cases were able to escape from the Colony than in former years owing to the temporary depletion of the police service to meet the needs of the New Territory. The result of this was that only the moribund cases and the dead bodies were detected, while most of those who had any chance of recovery managed to make good their escape to Chinese territory. This view is borne out by the fact that while during 1898 thirty-six per cent. of the cases reported were bodies found in the streets, &c., during 1899 forty per cent. were bodies so found.

The nationalities of the patients were as follows:—

Chinese	...	...	...	...	...	1,455
European (not including Portuguese)	...	...	...	...	...	7
Other non-Chinese	...	...	...	...	...	24

Of the deaths from this disease, two were British, one German, one Austrian, eight Indian, seven Portuguese, two Japanese, and the remainder (1,407) Chinese. The mortality, therefore, amongst the non-Chinese alone was 67·7 per cent., as compared with 65·3 per cent. in 1898.

The same measures were adopted in dealing with the outbreak as had been used in former years, namely:—(1) the removal of the sick to hospital and of the dead to the public mortuary; (2) the detention of persons who had been in contact with the sick pending the disinfection of the bedding and clothing; (3) the cleansing and disinfection of the infected premises, including a special house-to-house cleansing and disinfection throughout No. 9 Health District, in which the outbreak was most severe; and (4) the disinfection of all the public latrines by means of chloride of lime. The work was, however, greatly hampered by

the inability of the police to render any assistance this year, as they had done in former epidemics, and the impossibility of obtaining reliable assistance from other quarters. In addition to the above measures an attempt was made to reduce the number of rats in the city by employing Chinese and furnishing them with traps and bait, but only some 1,000 rats were destroyed in this manner.

In appendix B* will be found the addresses of all cases found in domestic buildings; the total number of such buildings was as follows :—

In the City of Victoria	...	...	...	...	709
In British Kowloon	...	...	...	...	66
					<hr/> 775

Eighty of the above named 709 houses in the city had cases of bubonic fever in 1898 and 2 of the Kowloon houses had also been infected the previous year. The total number of houses in which more than one case occurred was 117, and a list of these houses is given in the same appendix.

The following table gives the number of cases and deaths which have occurred each year since the outbreak of the disease :—

—	1894.	1895.	1896.	1897.	1898.	1899.
Chinese—						
Cases	2,619	43	1,157	21	1,244	1,455
Deaths	2,447	36	1,047	19	1,126	1,407
European—						
Cases	11	—	16	—	26	7
Deaths	2	—	8	—	11	4
Other Non-Chinese						
Cases	49	2	31	—	50	24
Deaths	36	—	23	—	38	17
Totals—						
Cases	2,679	45	1,204	21	1,320	1,486
Deaths	2,485	36	1,078	19	1,175	1,428

The figures for 1894 do not include a large number of dead Chinese bodies found in the streets and taken direct to the cemetery. It is unknown how many of these had died of bubonic fever.

HONG KONG,
1899.

Small-Pox.

This disease was more or less in evidence throughout the year, although only 69 cases were reported, as compared with 199 cases during the previous year. The number of deaths from small-pox was 35, three of which were among the Non-Chinese community—one in the British Navy, one in the Mercantile Marine, and one in the Civil Community. The nationalities of the patients were as follows :—Chinese 43, Europeans (including Portuguese) 17, Filipino 6, Indian 3. Three cases occurred on board H.M.S. “Undaunted,” the infection having been contracted at Wei-hai-Wei. No cases occurred among the troops stationed here, and it would appear, from the statistics of recent years, that they are better protected by vaccination than are the blue-jackets.

In 1897 I recommended that a small bonus should be offered to the Chinese house surgeons at the Native Hospitals (Tung-Wah, Alice Memorial and Nethersole) for all successful vaccinations, the vaccine to be supplied free by the Government, with a view to increasing the number of vaccinated persons in the Colony and thereby reducing the mortality from this disease. The scheme was specially recommended by the Sanitary Board, by resolution in August, 1898, but has, I regret to say, not yet been given effect to.

The total number of vaccinations recorded last year was 6,529 as compared with 7,051 during 1898, being a decrease of 522. This can hardly be regarded as satisfactory, in view of the fact that there has been an increase of nearly 5,000 to the population.

Enteric Fever.

Fifty-nine cases of enteric fever were reported during the year, as compared with 52 in 1898, but 28 of these cases were imported, as compared with 14 imported cases in the former year, so that there has been a slight reduction in the number of local cases of this disease.

The following table gives the number of cases reported annually since the introduction of compulsory notification :—

Year.	Total.	Imported.	Contracted Locally.
1896 ...	37	7	30
1897 ...	65	23	42
1898 ...	52	14	38
1899 ...	59	28	31

The nationalities of the cases were as follows :—European 36, Hong Kong, of which 22 were imported, Chinese 17, of which two were 1899.
imported, Japanese 4 (all imported), and Indian 2. The average age of the European cases was 25 years, while seven of the Chinese cases were under ten years of age, five of them being under five years old.

Ten cases occurred on board the various British and foreign men-of-war in the harbour as follows :—H.M.S. "Rattler" 1, H.M.S. "Daphne" 1, H.I.G.M.S. "Gefion" 2, H.I.G.M.S. "Hertza" 1, H.I.G.M.S. "Moeue" 1, H.I.I.M.S. "Carlo Alberta" 2, U.S.S. "Bennington" 2. No cases occurred among the troops.

The total number of deaths from this disease was 27, 11 being non-Chinese. This is equal to a case-mortality of 45·7 per cent. There were seven deaths among Europeans, which is equal to a case-mortality of 19·4 per cent., which is much the same as the mortality of this disease in England.

Diphtheria.

Nine cases of diphtheria were reported during the year, as compared with 5 cases during the year 1898; 6 of the cases occurred in Chinese, and 3 in Europeans, 1 of the latter being a sister at the Government Civil Hospital. One of the Chinese cases was imported from Canton, but the remaining eight cases developed locally. The European cases all recovered, but four deaths occurred among the Chinese.

Puerperal Fever.

Twelve cases of puerperal fever were reported during the year, but it is to be presumed that more than 12 cases actually occurred, as 12 deaths were also registered as due to this disease. Ten of the cases were Chinese, one a Portuguese and one an Indian, while 11 of the deaths were among Chinese, the remaining death being in an Indian. In addition to the above 12 deaths, there were no less than 29 deaths registered as due to child-birth among the Chinese, and no doubt many of these were cases of puerperal infection, and in view of the low birth-rate among the Chinese in this Colony, it is apparent that there is a very heavy mortality among the Chinese parturient women, due, there can be little doubt, to the insanitary conditions under which they live. In my annual report for 1898 I pointed out the great need for some maternity Charity among the Chinese in this Colony, and I am glad to be able to state that the Tung Wah Hospital has taken up the suggestion, and proposes to provide some maternity

HONG KONG, wards in its new extension, and if these are made available for
1899. the poorest classes, we may hope to see a considerable reduction
— in the mortality of Chinese women from child-birth.

Scarlet Fever.

Two European cases of scarlet fever occurred on board H.M.S. "Powerful" early in the year, the infection having apparently been brought out from home by some midshipmen who had recently recovered from this disease. The disease is comparatively unknown in this Colony, as it does not appear to occur among the Chinese.

Chicken-Pox.

This is not a notifiable disease, but a somewhat extensive outbreak of chicken-pox occurred in the spring of the year and one death, in a European child, was registered as due to broncho-pneumonia following this disease.

RETURN SHEWING the NUMBER and CAUSES of DEATHS HONG KONG,
 REGISTERED during the YEAR ended the 31st day of 1899.
 DECEMBER, 1899.

Causes.	Yearly Total.		Remarks.				
	Cases.	Deaths.					
GENERAL DISEASES.							
A.—SPECIFIC FEBRILE DISEASES.							
<i>Zymotic.</i>							
Small-pox	—	35	
Measles	—	1	
Rötheln	—	1	
Whooping Cough		—	6	
Mumps	—	1	
Diphtheria	—	4	
Fever, Typhoid (Enteric)			—	27	
„ Simple Continued			—	8	
Diarrhœa	—	323	
Dysentry	—	40	
Bubonic Fever (Plague)			—	1,434	
Influenza	—	1	
Chicken-pox	—	1	
<i>Malarial.</i>							
Fever, Intermittent		—	167	
„ Remittent		—	234	
„ (Undefined)		—	145	
Beri Beri	—	202	

HONG KONG,
1899.*Number and Causes of Deaths—cont.*

Causes.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES— <i>cont.</i>			
A.—Specific Febrile Diseases— <i>cont.</i>			
<i>Septic.</i>			
Pyæmia	—	3	
Septicæmia	—	16	
Puerperal Fever	—	12	
<i>Veneral.</i>			
Syphilis (Acquired)	—	11	
„ (Congenital)	—	13	
<i>Zoogenous Diseases.</i>			
Hydrophobia	—	1	
Total Group A. ...	—	2,686	
B.—DISEASES DEPENDENT ON SPECIFIC EXTERNAL AGENTS.			
<i>Parasites.</i>			
Worms	—	3	
<i>Poisons.</i>			
Vegetable—			
Opium... ..	—	6	
„ (suicide)	—	4	
Heart Failure due to Chloroform ...	—	2	
Gaseous—Fire Accident	—	6	
<i>Effects of Injuries.</i>			
Burns	—	8	
Scalds	—	2	

Number and Causes of Deaths—cont.

HONG KONG,
1899.

Causes.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES— <i>cont.</i>			
B.—Diseases dependent on specific External Agents— <i>cont.</i>			
Effects of Injuries— <i>cont.</i>			
Heat Apoplexy	—	3	
Multiple Injuries	—	3	
Injury from fall	—	2	
Injuries to Scalp and Body	—	1	
„ to Skull and Brain	—	1	
Shock due to Injuries	—	3	
„ due to Surgical Injury... ..	—	2	
Hæmorrhage from Lungs (from fall)	—	1	
Dislocation of Neck (from fall) ...	—	1	
Wound of Thigh	—	1	
Extensive wound of Leg	—	1	
Bullet wound of Brain (murder) ...	—	1	
„ „ of „ (suicide)	—	1	
„ „ of Femoral Vein	—	1	
Fracture of skull	—	26	
„ of Cervical Vertebrae	—	1	
„ of Spine	—	2	
„ of Ribs	—	3	
„ of Pelvis and Hæmorrhage	—	1	
„ of Elbow (compound commi- nated).	—	1	
Rupture of Urethra (accident) ...	—	1	
„ of Liver	—	1	

HONG KONG,
1899.

Number and Causes of Deaths—cont.

Causes.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES— <i>cont.</i>			
B.—Diseases dependent on specific External Agents— <i>cont.</i>			
Effects of Injuries— <i>cont.</i>			
Rupture of Spleen	—	6	
„ of Uterus	—	1	
Concussion of Brain	—	3	
Hanging	—	1	
„ (execution)	—	2	
„ (suicide)	—	5	
Cut-throat (suicide)	—	3	
Drowning	—	27	
Suffocation by Débris of fallen house	—	1	
„ by Landslip	—	1	
Starvation	—	1	
Exhaustion	—	1	
Gangrene of Arm (Traumatic) ...	—	3	
„ of Leg	—	1	
<i>Errors of Diet.</i>			
Alcoholism (Chronic)	—	2	
„ (Acute)	—	1	
Delirium Tremens	—	3	
Total Group B ...	—	152	
C.—DEVELOPMENTAL DISEASES.			
Immaturity at Birth	—	48	
Debility	—	64	

Number and Causes of Deaths—cont.

HONG KONG
1899.

Causes.	Yearly Total.		Remarks
	Cases.	Deaths.	
GENERAL DISEASES— <i>cont.</i>			
C.—Developmental Diseases— <i>cont.</i>			
Old Age	—	173	
Marasmus and Atrophy	—	179	
Inanition	—	30	
„ (Cleft Palate)	—	1	
Tabes Mesenterica	—	4	
Total Group C. ...	—	499	
D.—MISCELLANEOUS DISEASES.			
Articular Rheumatism... ..	—	2	
Purpura Hæmorrhagica	—	2	
Cancer of Submaxillary Gland ...	—	1	
„ of Upper Jaw	—	1	
„ of Larynx	—	1	
„ of Stomach	—	2	
„ of Liver	—	1	
„ of Peritoneum... ..	—	1	
„ of Rectum	—	2	
„ of Penis and Scrotum ...	—	1	
„ of Uterus	—	2	
Scrofula	—	4	
General Tuberculosis	—	31	
Anæmia	—	9	
Leprosy	—	2	
Total Group D	—	62	

HONG KONG.
1899.

Number and Causes of Deaths—cont.

Causes.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES.			
A.—THE NERVOUS SYSTEM.			
Meningitis	—	15	
„ (Tubercular)	—	2	
„ (Spinal)	—	1	
Apoplexy	—	27	
Paralysis (Undefined)	—	15	
(a.) Hemiplegia	—	9	
(b.) Paraplegia	—	9	
Paralysis Agitans	—	1	
Infantile Convulsions	—	337	
Tetanus	—	10	
„ (Traumatic)... ..	—	9	
Trismus	—	594	
Hydrocephalus	—	2	
Epilepsy	—	3	
Mania	—	2	
Dementia	—	2	
„ Senile	—	3	
Melancholia	—	1	
Cerebral Softening	—	1	
Eclampsia	—	1	
Peripheral Neuritis	—	1	
Total Group A.	—	1,045	

Number and Causes of Deaths—cont.

HONG KONG,
1899.

Causes.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES— <i>cont.</i>			
B.—THE CIRCULATORY SYSTEM.			
Heart Disease	—	114	
„ (Congenital)	—	2	
Rupture of Heart	—	1	
Aneurism (Aortic)	—	11	
Pericarditis (Septic)	—	2	
Thrombus	—	1	
Total Group B.	—	131	
C.—THE RESPIRATORY SYSTEM.			
Bronchitis	—	337	
Pneumonia	—	83	
Phthisis	—	731	
Pleurisy	—	8	
Empyema	—	9	
Asthma	—	26	
Laryngeal Obstruction... ..	—	1	
Pulmonary Hoemorrhage	—	1	
Gangrene of Lung	—	1	
Total Group C.	—	1,197	
D.—THE DIGESTIVE SYSTEM.			
Cancrum Oris	—	1	
Tonsilitis	—	1	
Gastritis... ..	—	1	
Enteritis	—	4	

HONG KONG,
1899.*Number and Causes of Deaths—cont.*

Causes.	Yearly Total.		Remarks
	Cases.	Deaths.	
LOCAL DISEASES— <i>cont.</i>			
D.—The Digestive System— <i>cont.</i>			
Gastro-Enteritis	—	2	
Gastric Ulcer	—	1	
Colic	—	3	
Hepatic Abscess	—	3	
Cirrhosis of liver	—	7	
Gallstone	—	1	
Peritonitis	—	8	
„ (Suppurative)	—	1	
„ (Traumatic)	—	1	
Intussception of Bowel	—	1	
Jaundice... ..	—	5	
„ (Obstructive)	—	2	
Hernia, Strangulated	—	1	
„ „ (operation)	—	1	
Appendicitis (operation)	—	1	
Sprue	—	1	
Hæmorrhoids	—	1	
Total Group D.	—	47	
E.—THE URINARY SYSTEM.			
Bright's Disease	—	43	
Calculus, (vesical)	—	1	
„ (operation)	—	1	

*Number and Causes of Deaths—cont.*HONG KONG,
1899.

Causes.	Yearly Total.		Remarks
	Cases.	Deaths.	
LOCAL DISEASES—cont.			
E.—The Urinary System—cont.			
Uræmia	—	1	
Rupture of Bladder	—	1	
Total Group E.	—	47	
F.—THE GENERATIVE SYSTEM.			
Mettorrhagia	—	1	
Epididymitis (Suppurative)	—	1	
Stricture of Urethra	—	1	
Total Group F.	—	3	
G.—AFFECTIONS CONNECTED WITH PREGNANCY.			
Abortion	—	1	
Rupture of Extra-Uterine Pregnancy	—	1	
Total Group G.	—	2	
H.—AFFECTIONS CONNECTED WITH PARTURITION.			
Child-birth	—	29	
Retained Placenta	—	1	
Total Group H.	—	30	
I.—THE SKIN.			
Cellulitis of Leg	—	2	
Carbuncle	—	3	
Boils	—	93	
Total Group I.	—	98	

HONG KONG,
1899.

Number and Causes of Deaths—cont.

Causes.	Yearly Total.		Remarks
	Cases.	Deaths.	
LOCAL DISEASES— <i>cont.</i>			
J.—DISEASES OF ORGANS OF LOCOMOTION.			
Hip-joint Disease	—	6	
" " (Tubercular) ...	—	1	
Knee-joint Disease	—	4	
" " (Tubercular) ...	—	1	
Tubercular Disease of Vertebrae ...	—	1	
Caries of Spine	—	2	
Total Group J.	—	15	
UNDEFINED.			
Dropsy	—	42	
Tumour of Abdomen	—	1	
" of Brain	—	2	
Abscess, Alveolar	—	1	
" of Thigh	—	4	
Undiagnosed	—	117	
Total Undefined and Undiagnosed...	—	167	
GRAND TOTAL	—	6,181	

MAURITIUS.

REPORT OF THE DIRECTOR, MEDICAL AND HEALTH DEPARTMENT FOR THE YEAR 1899.

(Extract.)

STATISTICS OF POPULATION, 1899.

The estimated population for the year showed a slight increase over that of 1898. The figures are ; 379,586 for 1899, 378,872 for 1898, and 377,856 for 1897.

The increase in 1899 was particularly among the Indo-Creole population, whilst there was a marked falling off among the immigrants.

The birth-rate of the year was 39·4 per thousand against 36·3 in 1898 and 36·1 in 1897.

The death-rate of the Colony was 37·9 per thousand against 31·9 in 1898 and 29·5 in 1897.

The year under review, as compared with the previous one, shows therefore an increase in the population of 714, an improvement in the birth-rate of 3·1 per thousand, and a rise in the death-rate of 6 per thousand.

The rise in the death-rate is partly due to plague, which broke out in this Colony in January 1899, and assumed an epidemic character in the month of June following.

PREVAILING DISEASES.

The year opened with a localized outbreak of plague in the eastern suburb of Port Louis (*Camp Yolofts*), which gradually diffused itself over certain parts of the Colony. The number of cases shown in the accompanying nosological returns, viz., 66 with 32 deaths, include only those which were diagnosed as such after the patients' reception at a public hospital and before their removal to special lazarets, where the bulk of plague cases were sent direct for treatment.

MAURITIUS, 1899. A fact worthy of note is that not a single patient contracted plague whilst under treatment in hospital—a result due to the special precautions taken in all public hospitals of isolating all suspicious cases in a special ward, on admission.

Separate reports will be forwarded dealing fully with the outbreak, progress of, and measures adopted for stamping out the disease.

Apart from plague, the Colony has been free from all other epidemic or highly contagious diseases.

Influenza.

There has been no material variation in the number of admissions for influenza, the figures being 726 for 1898 and 783 for 1899. The death-rate in the two years was 5.10 and 4.47 per cent. respectively.

Enteric fever.

Enteric fever showed a slight increase in the number admitted to hospitals, and there are indications pointing to the disease spreading in the higher localities of the Colony. The number admitted into public hospitals was 22 cases in 1898 and 26 in 1899.

The cases were nearly equally distributed throughout the year, and, as far as has been observed, does not bear any direct relation to the hot or dry season or to the rainy months. The chief source of infection has been from the use of impure river water, and, in a few cases, was apparently due to air-borne infection from soil contamination due to the habits of the natives and to the extensive manuring of the fields with human excreta.

Dysentery.

Against 774 admissions recorded in 1898, there were but 606 in 1899. These cases occurred in a sporadic form.

This intestinal complaint prevails generally after the heavy rains, when all the water courses have been polluted by the surface waters which in many places run directly towards the rivers, on the banks of which many Indian camps and villages are situated.

Malarial Fever.

The number of admissions for the intermittent and remittent types decreased from 5,510 in 1898 to 3,969 in 1899. The disease prevailed mostly during the month of May, necessitating 725 admissions.

The comparison with the three previous years exhibits a marked decline.

March and April 1899 had been rainy months, and the oft verified theory put forward by the late Dr. Meldrum, L.L.D., F.R.S., that the highest mortality for this complaint takes place two months after the highest rainfall, was again exemplified. MAURITIUS,
1899.

As a matter of fact, irregular seasons and abnormal rainfall both act, in this Colony, on the physical condition of the population—especially the labouring class,—who are thus unable to withstand the effects of exposure to and vicissitudes of climate.

It must also be stated that the heavy rainfall of March 1899 had been preceded by drought.

In October 1898 the rainfall had been 66 % below the average, in January 1899 it remained 69 % below average, but rapidly increased to 47 % above the average in March 1899. The amount in inches during that month was 12·13.

Tracts of low-lying land became flooded and rendered partly marshy, thus offering suitable breeding grounds and habitat for mosquitoes.

Anæmia and General Debility.

These two affections, which occupy a rather prominent position in the returns, may be conveniently bracketed together, because most of those that have come under treatment present a history of malaria and poverty, which are all important factors in producing blood deterioration.

There were 384 admissions for anæmia in 1898 and 322 in 1899. General debility figured as 547 for 1898 and 504 for 1899.

Respiratory System.

Affections of that class were largely on the decrease, having fallen from 2,399 admissions in 1898 to 1,902 in 1899. In the former year the largest number of admissions was in July (259), whereas in 1899 it was in May (235). Tuberculosis is gradually increasing. The chief sufferers are the native population of the working class. Their susceptibility to the disease is chiefly due to their insanitary surroundings and to the absence of any precautionary measures when exposed, in domestic life, to contamination, while their natural apathy, unfitting them for the struggle for life, leaves them content with an unsuitable and miserable dietary.

The mean humidity, which in 1899 was 81·9 in February and 81·3 in March, gradually decreased to 77·8 in April and to 77·3 in May. The mean temperature also exhibited similar fluctuations, having been 79·6 in January, 78·3 in February, 78·4 in March, 77·2 in April and 73° in May.

Diseases due to these conditions have been, as usual, of tubercular and partly of an inflammatory pulmonary type.

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1899.

Digestive System.

Diseases of the digestive system also exhibited a marked decline. The number of admissions fell from 1,588 in 1898 to 1,001 in 1899. The largest number admitted was during the months of January and May.

The increased number of admissions in January was to a great extent caused by the high range of temperature which obtained in that month, but the same reason does not hold good for the admissions of May, which, apparently, was caused by the impure condition of the drinking water.

RELATIVE MORTALITY IN THE DIFFERENT SEASONS.

The following table shows the quarterly mortality of the year which obtained in the public hospitals :—

1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.
219	361	263	221

The second quarter of the year is responsible for the highest rate of mortality, while the first and last quarters show a lesser rate.

The high rate of mortality in the second quarter is to be ascribed to dysentery, malarial fever, debility, and diseases of the respiratory and digestive systems.

This quarter in reality is saddled with the mortality resulting from the chronic complaints due to fever and intestinal diseases consequent upon the influences of the warm season, while in it are likewise registered many deaths due to the acute diseases of the respiratory system brought on by the advent of the change of weather ushering in the cold season.

METEOROLOGICAL CONDITIONS OF THE SEASONS, AND THEIR PROBABLE EFFECT WITH REGARD TO SICKNESS.

The warm and rainy months of the year, extending generally through the first three or four months of the year, have a direct influence in the causation of malarial fevers in this Colony.

Cyclonomic disturbances likewise affect the public health, owing to effluvia arising from decaying vegetable matter strewn over the ground after these occurrences.

Contamination of the water supply also takes place through refuse and dirt of all kinds which are then washed into the rivers

and canals. These water-courses not only run through cultivated lands richly manured, but also thickly populated villages. MAURITIUS, 1899.

As has been previously remarked, the high range of temperature which obtained from January to April, the heavy rainfall of March, coupled with the cyclonomic disturbances which took place on the 3rd and 9th of the same month, alike contributed towards bringing about a recrudescence of fever in May. The variation of temperature and humidity of the atmosphere are also responsible for some of the bowel complaints, principally dysentery, which prevailed in April.

RECURRENCE OF PARTICULAR DISEASES DURING THE YEAR.

With the exception of malarial fevers, there has been no particular incidence of other diseases during the year.

The plague followed in Mauritius the course which it seems to have adopted in India. There is the initial period, during which the disease slowly but surely established itself, followed by an acute exacerbation lasting for a few weeks, and afterwards a somewhat rapid decline. It does not seem to have been affected by weather or temperature, and its stay in any place has depended upon the extent of the inhabited locality and the presence, in greater or smaller numbers, of rats for its dissemination.

GENERAL SANITARY CONDITION OF THE COLONY.

Had it not been for the advent of plague, the sanitary condition of the Colony during 1899 might have been described as fairly good. The usual endemic diseases followed their ordinary course and nowhere presented marked exacerbations.

Were it not for the poverty prevailing among the lower classes, congregating in certain quarters of Port Louis and in large villages, the sanitary conditions of these places would not, by themselves, cause half the recorded mortality.

The drainage of our principal towns remains exceedingly defective. In Port Louis, a great improvement has been effected in the eastern suburb by the completion of the canalization of a filth-carrying open sewer, called the *Ruisseau La Paix*.

Sanitary measures, having in view improved surface drainage, have also been carried out in different sections of the town of Port Louis concurrently with other measures of sanitation, undertaken to check the spread of plague, but a great deal yet remains to be done in that direction.

In the western suburb the underground drainage works have been continued, and several large establishments, such as the new Civil Hospital, Central Railway Station, and some private

MAURITIUS, premises, have already been connected with the underground pipes which carry the sewage out to sea.
1899.

The drainage of the other chief townships (Curepipe, Beau Bassin, Rose Hill and Quatre Bornes) and other populous places is still very far from satisfactory, in spite of the yearly sums expended for that object. The solution of this sanitary question, which has long engaged the attention of the Sanitary Department, is becoming more and more pressing.

The water supply of all chief towns and populous localities, with the exception of those provided for by the Mare-aux-Vacoas, cannot be described as satisfactory. Indeed, in certain places it is harmful, as being one of the chief factors in the propagation of all water-borne diseases.

In the dry season it is frequently deficient in many localities, while in the rainy season dilute sewage is supplied to some, among which may be included the principal town—Port Louis.

River waters of the description available in this Colony are specifically polluted. Even the palliative—in the shape of sewage pollution being got rid of by the length of flow, by oxidation and other combined agencies—is but feebly present, inasmuch as points of contamination may be said to exist all along their course.

Two filters of the Maignien type have lately been provided for by the Municipal Corporation of Port Louis. They are erected in public squares, but the water yielded is, in the first place, of far too limited quantity to serve the needs of a population of 54,000 souls, while, in the second place, the filtered water is but sparingly made use of by the population in whose immediate vicinity the filters exist.

This is not to be wondered at, having in view the mode of life of Orientals and of a population which has still to be educated in sanitary matters. Even the public mind in this Colony has yet to grasp the fact that disease is largely preventable, for the action of the Sanitary Department to control and remove conditions which bear a direct relation to the causation of certain particular diseases meets with stubborn opposition and is generally viewed with distrust and dissatisfaction.

It is, however, a matter for congratulation that Government has extended the Mare-aux-Vacoas mains to Port Louis, but, unfortunately, the supply is only available to a limited extent. There can be no doubt that if this water could be placed at the disposal of the whole urban population for domestic purposes, a large proportion of the morbid influences conveyed through the instrumentality of water would be removed, with a resultant beneficial action on the health of the chief town.

The remarks contained in the previous report concerning overcrowding apply equally well here. Some slight improvement, however, has been carried out in Port Louis in connection

with the cleansing of lodging houses and insanitary buildings—a MAURITIUS, 1899.

VACCINATIONS.

There were 10,374 subjects successfully vaccinated during the course of the year by public vaccinators, giving a vaccination percentage of 69·42 of the yearly births.

No data are forthcoming of the number of vaccinations performed by private medical practitioners, but as vaccination is compulsory in this Colony, it is estimated that a very small proportion indeed of infants remain unvaccinated.

The inhabitants may be said to be tolerably well protected by vaccination, but it is a matter for consideration whether recourse should not be had to legislation to ensure re-vaccination at stated periods. This matter has already engaged the attention of the Government and Legislature.

Vaccination in this Colony has been performed for a number of years with animal vaccine lymph obtained from Paris. This lymph had given uniformly good results for several years past, but during the latter part of 1899 it failed to such an extent, on repeated occasions, that the public vaccinators have been compelled to have recourse to arm-to-arm vaccination. If the steps already taken to obtain a better quality of lymph are not successful, new arrangements will have to be made to ensure an efficient supply from another source.

MEDICAL.

Below is an extract from the Report of the Medical Superintendent of the Port Louis Civil Hospital:—

Extract from Dr. Antelme's Report dated 24.2.1900.

* * *

“VIII.—The principal types of malarial fever are the quotidian and tertian, and the attacks are not generally severe. Death occurs only—as a rule—amongst the poor people who for a long time have been labouring under malarial fever, whose spleen and liver are enlarged, and who are emaciated by anæmia and poverty. Complications easily happen amongst them. But notwithstanding the great number of those suffering from what I call “chronic malaria,” the pernicious attacks are rare, especially the form called “Black Water Fever.” I cannot say why amongst the Indians such pernicious attacks are, one can say, unknown, and rare amongst the Creoles of the lower classes. In fact, even in the other classes of the population pernicious attacks are not so common as they were formerly. Perhaps the population is, so to speak, vaccinated by the previous and severe attacks.

“A severe form of fever is the choleric form, with which we meet now and then. It is the most common pernicious form.

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1899.

"The malarial attacks are especially common at the end of the summer months, from March to the beginning of June, some weeks after the heavy rains; but at any time there are cases of malaria.

"Remittent fever, characterized by fever, jaundice, congestion of the liver, is not so common as it was formerly, and it rather occurs amongst those who have had several attacks of fever and whose spleen and liver are enlarged.

"Patients labouring under malarial cachexia (they are in great numbers) ought to be sent to a sanatorium in the temperate regions of the Island. Only there can they be cured quickly, whilst in the hospital they are only an obstruction and cause expenditure to Government without deriving any profit for themselves.

"Hepatitis is a common complication of malarial fever, more frequently characterized by enlargement of the liver; the abscesses generally occur in the course of dysentery, especially when this disease has been neglected.

"IX.—Dysentery is one of the most frequent diseases of the lower classes, especially during the hot season. During summer people drink much and are subject to many troubles of the digestive system; and when these troubles are neglected, enteritis and dysentery happen. If the rate of mortality by that affection is rather high, it is due very often to the carelessness of the patients, who are not treated in time, who abandon themselves to quacks, and who only claim medical assistance when the disorders are incurable.

"X.—I will again, this year, call attention to the great number of patients suffering from phthisis pulmonalis. As I have noted, this disease is due to anæmia, to physiological misery so frequent in the lower classes, to the inobservance of the elementary rules of hygiene (bad food, unhealthy buildings, promiscuity of the tenants), and also the consequence of the various epidemics of influenza which have prevailed for the last ten years with more or less intensity.

"Surely phthisis pulmonalis makes more ravages in the lower classes of population than the malarial fever and the other diseases.

Syphilis.

"XII.—Syphilis is very common, and we often attend patients suffering from tertiary syphilis, characterized by terrible lesions. People of the lower classes cannot bear in mind that when the primary accidents have disappeared, they have still to submit themselves to a preventive treatment. They do not believe in infection of the blood, and they fancy they are cured when the external lesions have disappeared. A preventive treatment is above the capacity of their mind. Then they marry and poison

their wives and their progeny. I am sure that constitutional syphilis is a frequent cause of death amongst the children, especially in the Indian population." MAURITIUS, 1899.

QUARANTINE.

The new Quarantine Ordinance which came into operation in 1898 has worked very smoothly during the past year. Its enforcement did not lead to any hardship upon the vessels or passengers.

It is satisfactory to note that although this port is in constant communication with plague centres in India, not a single case of the disease manifested itself at any time on board any of the vessels arriving here direct from Calcutta or Bombay.

This is doubtless due to the admirable measures of precautions enforced at these ports.

During the course of the year only 19 vessels, arriving here from infected ports, within the quarantine limits (15 days), were detained to complete that period and undergo cleansing and disinfection.

Forty-four other vessels were subjected on arrival to disinfection before admission to pratique.

CENTRAL PRISON OF PORT LOUIS.

The following table gives the comparative prevalence of these respective diseases in the four quarters of the year as contrasted with 1898 :—

Quarter.	Total No. of patients.		Malaria.		Respiratory Diseases.		Diseases of the Digestive System.		Dysentery.		Influenza.		Anæmia.		Debility.	
	1898.	1899.	1898.	1899.	1898.	1899.	1898.	1899.	1898.	1899.	1898.	1899.	1898.	1899.	1898.	1899.
1st	318	261	191	102	19	37	40	41	29	17	5	0	4	8	3	1
2nd	364	369	194	147	33	53	36	30	26	22	24	34	6	18	6	14
3rd	255	253	104	39	54	60	28	34	18	10	3	1	12	22	4	15
4th	213	236	61	57	42	36	28	31	16	12	0	0	4	15	8	14
	1,150	1,119	550	345	148	186	132	136	89	61	32	35	26	63	21	44

Malaria and dysentery prevailed in the first two quarters, influenza in the second, and respiratory diseases in the second and third. As in 1898, gastro-intestinal complaints were of comparatively uniform occurrence throughout the year. The above table shows a considerable diminution in the number of cases of malarial fever and dysentery as compared with the preceding year. There was, on the other hand, an increased prevalence of respiratory diseases, anæmia and debility. The two last-mentioned affections were exclusively complaints of newly-admitted prisoners.

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REMARKS ON PARTICULAR DISEASES THAT HAVE OCCURRED
DURING THE YEAR. THEIR GENERAL CHARACTER
AS TO MILDNESS OR SEVERITY.

Malaria.

1. The following is a classification of the malarial cases that have occurred during the year according to their clinical types :—

Types.					Cases.	Deaths.
A. Intermittent—						
a. Single attacks	...	...	...	...	121	—
b. Quotidian	...	...	...	...	181	—
c. Tertian	...	...	...	...	14	—
d. Quartan	...	...	...	...	11	—
e. Irregular	...	...	...	...	6	—
B. Remittent	...	...	...	...	10	—
C. Pernicious	...	...	...	...	2	1
Total					345	1

No fewer than 121 cases consisted of single attacks without recurrence.

In the great majority of the cases of quotidian fever the daily attacks were mild and not more than two in number. Very few had three attacks, and still fewer four.

Some of the tertian and quartan cases had a malignant character, but all recovered.

In six cases the clinical aspect of the disease was atypical, the thermometric curve showing irregular intermittence.

Of the two pernicious cases, both of which were characterised by hyperpyrexia and severe cerebral symptoms, one recovered. I attribute this successful result to the constant application of

MAURITIUS,
1899.

cold in the shape of cold baths, ice to the head, and wet packing, coupled with hypodermic injections of bichlorhydrate of quinine. The malignant cases of remittent fever were similarly treated with very good results. The only fatal case was that of a notoriously alcoholic individual, who was undergoing at least his fiftieth sentence for drunkenness, and who fell ill two days after his admission into prison. In a few hours the fever assumed the pernicious character. Cold applications were followed by marked subsidence of the fever and of the cerebral symptoms, but a relapse soon took place, in which every treatment proved of no avail.

Having read in the *British Medical Journal*, on the 15th of July last, a paper by Major O. Fitzgerald, I.M.S., on the treatment of malarial fever by the inunction of creosote (in the proportion of 30m for 3i of olive oil, for an adult) over the chest, abdomen and arm-pits, I gave this new method a fair trial, and I am in a position to state that the treatment recommended really gives satisfactory results. Many cases were treated with creosote only without one single grain of quinine being administered, and yet there was no unusual recurrence of the fever. Some of the cases of continued fever were also treated in the same manner. With but very few exceptions, the inunction of creosote was invariably attended by profuse perspiration, followed by a fall of temperature (sometimes to nearly normal) in from 2 to 4 hours, and there can be no doubt that it cuts short the febrile stage. In some instances, however, the treatment failed, and had to be supplemented by the internal administration of quinine. Failures were also recorded in cases which were subsequently found to be non-malarial (pneumonia, &c.) In not a single case was the application of creosote followed by collapse or any other evil effect. The treatment certainly deserves consideration. I intend continuing to experiment it on a large scale, and hope to be able in the course of the present year to furnish statistical returns on the results obtained.

Dysentery.

There were in 1899 only 61 cases of dysentery as compared with 89 in the preceding year. They may be classified as follows:—

Dysentery.						Cases.	Deaths.
1. Acute	...	...	...	...	...	55	1
2. Chronic	...	...	...	...	...	6	3
						61	4

The death-rate from acute dysentery was low—viz., 1·8 per cent,

The only fatal case was that of a prisoner who had been transferred from the prison of Beau Bassin to town almost in a dying condition, and who died four days after the transfer. MAURITIUS,
1899.

The treatment by sulphate of magnesium or sodium proved very successful, and has entirely superseded in my hospital practice the classical treatment by ipecacuanha. Rapid recovery took place in every case that was seen, from the very commencement of the disease. The saline treatment, however, completely failed in chronic cases. Half of these ended fatally.

This result is not to be wondered at when it is remembered that these patients were all men who had been suffering from the disease for a long time outside the prison, and who were admitted in a state of emaciation and debility, when all the resources of nature had abandoned them.

Under such circumstances, chronic dysentery usually proves intractable.

Respiratory Diseases.

3. Comparative statement for the last two years :—

Return of Respiratory Diseases.					Cases.		Deaths	
					1898.	1899.	1898.	1899.
Acute Laryngitis	...	...	...		2	1	—	—
Bronchitis—								
1. Acute	...	...	...	} 95 {	115	—	—	—
2. Chronic	...	...	...			14	—	—
Pneumonia	...	...	...		15	11	4	2
Gangrene of the Lung	...	...			—	1	—	1
Pleurisy	...	...	...		—	1	—	1
Asthma	...	...	...		30	35	—	—
Phthisis	...	...	...		6	8	1	1
					148	186	5	5

The above table shows that there were far more cases of bronchitis in 1899 than in 1898; all, however, of a mild character. The disease prevailed in the months of May, June, July, August and September—*i.e.*, in the winter season.

MAURITIUS,
1899.

There was one death from gangrene of the lung—the sequel of pneumonia, and one from acute pleurisy complicated by albuminuria and debility.

One of the cases of phthisis proved fatal from cerebral apoplexy. The patient had already been 5 months in hospital when he was suddenly seized one night with symptoms of cerebral hæmorrhage, and died 5 hours after.

As I have already pointed out in last year's report, a prolonged stay in the Prison Hospital of Port Louis, with its existing defects, is likely to be injurious to chronic respiratory affections (asthma, phthisis, &c.). I have recommended that as far as possible such cases be treated at Beau Bassin.

4. Diseases of the Digestive System—

Return of diseases of the Digestive System.					Cases.		Deaths.	
					1898	1899	1898	1899
Stomatitis	...	...	...	...	10	70	...	...
Tonsillitis	...	...	...	...	5	5	...	...
Gumboil	...	...	...	...	...	1	...	...
Gastralgia	...	...	...	...	...	1	...	...
Gastritis	...	...	...	...	...	2	...	...
Dyspepsia	...	...	...	...	6	1	...	...
Diarrhœa	...	...	...	...	93	47	...	...
Enteralgia	...	...	...	...	3	4	...	...
Rectitis	...	...	...	...	...	1	...	...
Piles	...	...	...	...	4	4	...	...
Other diseases	...	...	...	...	11	...	...	...
Total					132	136	0	0

There was in 1899 a far larger number of cases of stomatitis than usual requiring treatment in hospital, viz., 70 as compared with 10 in 1898. In addition to these hospital cases, 142 prisoners were treated as out-door patients for the same complaint. This disease, which is the only one that prevails among long-sentenced prisoners, is in my opinion chiefly caused by the prolonged use of salt-fish, which is not always of the best quality. All the cases

were of the mildest description, the out-door ones being rapidly cured by the substitution, for one or two weeks, of watercresses to salt-fish in the ordinary prison diet. I shall call the attention of Government to the absolute necessity of supplying this Establishment with salt-fish of the best possible quality. Whenever such be not procurable in the local market, it should be replaced by tripe or watercresses and onions and on no account whatever should salt-fish of inferior quality be issued to prisoners. Diarrhœa cases were much fewer than usual. They all readily yielded to change of diet and treatment.

MAURITIUS,
1899.

Influenza.

5. Influenza prevailed only in May and June. The cases were all mild and uncomplicated ones that ended in rapid recovery.

6. The only disease of the urinary system that came under my notice in 1899 was Bright's disease, of which there were 8 cases. They were all relieved by tonic treatment coupled with a purely milk diet.

7. Return of diseases of the lymphatic system :—

Chronic splenitis	...	...	...	...	31
Adenitis (acute)	...	...	...	...	3
Bubo	...	...	...	...	3
Acute lymphangitis	...	...	...	...	3
Total	...	...	...	...	40

8. Return of Skin Diseases :—

Scabies	...	...	...	...	20
Eczema	...	...	...	...	6
Psoriasis	...	...	...	...	1
Furuncles	...	...	...	...	4
Anthrax	...	...	...	...	2
Ulcers	...	...	...	...	37
Total	...	...	...	...	70

In addition to these 20 severe cases of scabies treated in hospital, no fewer than 177 prisoners were treated as out-door patients for itch. The cutaneous affection is invariably imported from outside, and is very seldom indeed to be found among the inmates of this prison. Men suffering from this disease are kept entirely separate from the rest.

Parasitic Diseases.

9. Four cases of endemic hæmaturia had to be admitted into hospital. In all of them the ova of bilharzia hæmatobia were

MAURITIUS, easily discovered, under the microscope, in the blood that was
 1899. passed, in small quantity, at the end of micturition. In no case
 — was the patient suffering from any constitutional disturbances.

Insanity.

10. Only one prisoner was sent to the Lunatic Asylum in 1899. The case was that of an unconvicted prisoner who was admitted into prison with hemiplegia, the result of cerebral apoplexy, and marked symptoms of dementia.

Accidents.

11. There was the same number of accidents as in 1898, viz., 11. The injuries sustained were all slight.

Surgical Operations.

12. All the operations but two were minor ones, such as incision of abscesses, tapping for hydrocele, circumcision, &c. One of the operations under chloroform was for extensive caries, involving nearly the whole of the left clavicle and part of the sternum. Almost complete excision of the clavicle had to be resorted to. The patient made a good recovery. The other capital operation was removal of a large fibro-sarcoma of the left thigh. The tumour was removed without considerable hæmorrhage, but, most unfortunately, the patient died of shock two hours after the operation. The malignant nature of the tumour was revealed by microscopical examination.

Death Returns, and Observations thereon.

13. There were 11 deaths during the year out of a total of 1,119 patients. This gives the lowest hospital death-rate for the last six years, as can be seen from the following table :—

Year.		Hospital death-rate.	
1894	...	10·2	per thousand patients.
1895	...	29	" "
1896	...	27	" "
1897	...	12·1	" "
1898	...	14·8	" "
1899	...	5·8	" "

The following table gives the relative mortality of the four **MAURITIUS**, 1899.
quarters as compared with 1898 :—

Quarter.	Average daily strength.		Number of patients.		Number of deaths.		Death-rate ratio per mille and average strength.		Hospital death-rate (per 1,000 patients.)	
	1898.	1899	1898.	1899.	1898.	1899.	1898.	1899.	1898.	1899.
1st ...	336.27	250	318	261	6	2	17.8	8	18.8	7.6
2nd ...	416.18	258	364	369	9	1	21.6	3.8	24.7	2.7
3rd ...	373.38	206	255	253	1	2	2.6	9.7	3.9	7.8
4th ...	289.90	217	213	236	1	6	3.4	27.6	4.2	25.4
Total ...	353.1	233.1	1,150	1,119	17	11	51	47.1	14.8	9.8

According to Table I. the death-rate of the prison of Port Louis (male population) was lower than that of the preceding year. Viz., 47.1 per mille of average strength as compared with 51. per mille of average strength in 1898.

The death-rate for the whole population of the prison including female prisoners is still lower for there was no death among female prisoners.

Average daily No. of prisoners.				No. of deaths.	Death-rate.
Males	...	...	233.15	11	47.1 per mille.
Females	...	...	17.93	0	0 "
Whole population of the } prison.			251.08	11	43.8 per mille.

The death-rate for the whole population of the Port Louis prison was, in 1898, 47.8 per thousand.

*Remarks on the deficient sanitary condition of the Prison
Hospital of Port Louis.*

14. The deficient sanitary condition of that part of the prison buildings which is being used as a hospital, and which was never meant to be such, has formed the subject of an exhaustive report

MAURITIUS, 1899. I forwarded to the Honourable Director of the Medical and Health Department in September 1898. What is called the prison hospital here is nothing but a corridor about 16 feet wide, provided with a bitumen roof that leaks considerably, although repairs have been repeatedly made therein. Light and ventilation—these important requisites of a hospital—are defective in spite of glass ventilators assisted by pankahs. When it is remembered that in such a place are treated cases of fever, diarrhœa, dysentery, bronchitis, phthisis, syphilis and surgical affections, all mixed together, it will be readily admitted that I am fighting disease here under the most unfavourable circumstances. I have appended hereto a table* giving the temperature of the place, taken every hour for a whole week; and I doubt very much that another hospital is to be found in the Island with such a high temperature record.

F. A. ROUGET, M.B., C.M.Ed.,

Police and Prison Surgeon.

31st January, 1900.

SPECIAL REPORT CONCERNING FEMALE PRISONERS.

1. Average daily number of female prisoners in prison, 17·93.
2. Average daily number of female prisoners in hospital, 3·32.
3. Total number of admissions into hospital from the female ward = 124, viz.:—101 female prisoners; 23 children of female prisoners.

Of these, 12 women and 9 children had no appreciable disease, but had nevertheless to be kept in hospital because children who were ill could not be separated from their mothers, and vice versa. Hence the total number of patients was:— 89 women; 14 children. Total, 103.

4. The following is a general statement of sickness and mortality for female prisoners for the year 1899:—

MAURITIUS.
1899.

Daily average strength.	No. of admissions into hospital for actual sickness.	Daily average No. of admissions into hospital.	Ratio per mille of daily admissions to strength.	No. of deaths.	Ratio per mille of deaths to strength.
17.93	89	24	13.3	0	0

5. The prevailing diseases were:—

	Women.	Children.
Malarial Fever	42	8
Respiratory diseases	11	4
Diseases of digestive system	3	—
Mumps	4	—
Influenza	2	—
Dysentery	1	—
Gestatio and Puerperium	5	—
Other diseases	21	2
	89	14

6. There was no death.

7. There were two cases of confinement. In both the labour was normal and the children were born alive.

F. A. ROUGET, M.B., C.M.Ed.,

Police and Prison Surgeon.

31st January, 1900.

MAURITIUS,
1899.

MOKA PUBLIC HOSPITAL.

Les maladies qui figurent le plus communément sur nos registres, sont : la malaria ou fièvre intermittente ; l'influenza, les albuminuries, la dysenterie, la tuberculose, le syphilis, les rhumatismes, la fièvre typhoïde. Les cas de chirurgie, de gynécologie sont très rares.

Les affections cutanées sont fréquentes, et relèvent le plus souvent de l'alimentation des Indiens et des Créoles et de la malpropreté. La filaria est devenue très rare depuis quelques années et l'érysipèle plus encore.

A. MALARIA OU FIÈVRE TELLURIQUE PAR SPOROZOAIRES DE LAVERAN.

C'est dans les quatre premiers mois de l'année que les cas de malaria ou fièvre intermittente se montrent les plus fréquents. Le sporozoaire de Laveran veut pour se développer l'humidité. Tant que la terre est sèche, la fièvre intermittente ne se manifeste pas, à moins que par le voisinage de *purin* ou d'eau stagnante, sur le bord des rivières, les moustiques ne viennent y puiser les germes.

L'absorption de ces germes se fait et par les voies respiratoires, et par l'eau ingérée, et par la peau (moustiques).

Dans les villes, les habitants des étages sont beaucoup moins atteints que ceux des rez de chaussée, effet produit par les vapeurs humides qui se dégagent du sol imprégné de spores et pénètrent par les voies respiratoires.—Je possède des faits indéniables de genèse par l'eau des boissons contenant les germes des sporozoaires. J'ai constaté le fait chez une famille qui au mois d'Août, étant sur le rivage de la mer, jouissait depuis un mois d'une santé parfaite, faisant usage d'une eau légèrement saumâtre. Tout à coup, pour avoir bu l'eau d'un puits qu'elle ignorait, mais dont l'apparence était des plus engageantes, l'eau étant limpide et sans sel, tous ceux qui en usèrent furent dès le lendemain pris de malaria intense avec troubles bilieux. La famille fut obligée de retourner sur les hauteurs de l'Ile, et eut de la peine à combattre les effets de cet empoisonnement. Les injections hypodermiques de bi-chlorhydrate de quinine durent être pratiquées et renouvelées pour le combattre. C'est l'histoire des marins de la *Gloire* et de la *Victorieuse* en 1850, qui, éprouvés par la fièvre intermittente sur les côtes de la Chine, changèrent leur eau habituelle en eau bouillie à l'imitation des Chinois, et virent disparaître la malaria à bord des deux navires.

Le district de Moka s'étend des Pailles, près de Port Louis, aux régions élevées de la Nouvelle Découverte, de la Montagne Blanche, de l'Ermitage. C'est des Pailles que nous viennent les cas de malaria appartenant au district. Dans ses autres parties,

les manifestations ne se produisent çà et là, que pendant la saison des pluies,—chez les individus qui habitent au voisinage des amas de fumier, ou lorsque des mares intermittentes se forment près des demeures, ainsi que je l'ai observé depuis trois ans, tout près de l'hôpital, près du logement des serviteurs. Ce sont les étrangers au district qui forment plus de la moitié des cas traités à l'hôpital de Moka pour malaria.

Dans l'immense majorité des cas, la forme de la fièvre de début est bilieuse, et, il est rare qu'un accès ait lieu sans troubler les fonctions biliaires; aussi le moyen le plus rapide, le plus économique, de guérir le malade est de lui pratiquer des injections hypodermiques de solution de bi-chlorhydrate quinine.—3 injections de 0.30 à 0.50 centigrs. de ce sel à 7 heures d'intervalle suffisent; pendant ce temps l'état bilieux est vaincu par les purgatifs, quelquefois l'Ipéca.

Les injections doivent être faites avec une asepsie parfaite de la peau, des instruments, de la solution. Pour prévenir le tétanos, il suffit d'appliquer une pièce de taffetas de Vigo sur la piqure ou une couche mince de collodion.—Ces injections sont absolument nécessaires et doivent être pratiquées le plus tôt possible dans la forme ictero-hémorrhagique, à la dose minima de 0.50 centigrs. renouvelable au plus 3 à 4 fois dans les deux premiers jours.—Les purgatifs, le climat font le reste. Dès que l'estomac est bon,—20 gouttes de solution de perchlorure de fer par jour, administrées en 2 fois dans du lait, ne tardent pas à combattre l'anémie. Les injections de bi-chlorhydrate de quinine constituent un moyen excellent aussi pour éviter les récidives. Cependant, il arrive chez les chroniques, que l'usage d'une solution de Benzoate de soude et de Caféine, unie à la quinine et à la strychnine, devienne nécessaire. Lorsqu'il n'y a pas urgence à employer les injections hypodermiques qui sont redoutées en raison de la douleur,—il convient d'ouvrir le traitement par l'ipéca et les purgatifs, afin de donner l'appétit aux malades, et de faire disparaître la bile des urines.—Alors on doit donner les sels de quinine de 7 en 7 heures en solution à jeun, jusqu'à ivresse quinique—signe de l'intolérance.

La cachexie malariale qui se traduit par spléno-mégalie hydro-mélanémie—amaigrissement, exigent trois facteurs :

- 1°. Du *vrai* quinquina jaune en poudre aux repas ;
- 2°. Des pilules antécibum-aloès et extrait de quinquina au dîner suivies le lendemain matin 2 fois la semaine d'un purgatif salin additionné de teinture de Jalap ;
- 3°. L'application de linges froids et humides chaque jour sur la région splénique, et bientôt l'hydrothérapie en douches légères sur la rate, en bains frais et rapides.

Ce traitement est la formule prophylactique de la fièvre intermittente, c'est-à-dire, que celui qui habite une région malariale, doit, les trois quarts de l'année, avoir un excellent appétit et des urines normales en quantité et en qualité. Les pilules antécibum doivent être prises aussitôt que l'appétit diminue;—de la quinine

MAURITIUS, dans du café ou du thé le matin; aux repas du vrai quinquina, 1899. et tous les jours le bain frais ou même froid.

Une forme pernicieuse rare à Moka, mais terrible chez l'adulte et surtout chez l'enfant, est la cholériforme. Elle guérit aisément par les injections de bi-chlorhydrate de quinine, combinées à l'usage de la solution de chlorure de sodium 7 grammes 50 par litre, dite serum artificiel,—en bain interne de 500 à 1,000 grammes à garder, et par ingestion, additionnée d'albumine de l'œuf et de quelques gouttes d'elixir parégorique.

B. INFLUENZA.

Après la Malaria, c'est l'Influenza qui fournit le plus grand nombre de malades.

Depuis la grande épidémie d'Influenza qui parcourut l'Europe en 1889, l'Influenza nous est arrivée en 1890, se manifestant sous la forme d'une épidémie générale, infectieuse et contagieuse, peu grave quoique pénible. En 1893, elle reparut et fit bon nombre de victimes parmi les vieillards et surtout chez les enfants.

Depuis, l'Influenza est devenue endémique à Maurice, se manifestant ça et là surtout en hiver sous forme de petites épidémies plus ou moins sévères, le plus souvent sans gravité excepté sur les très jeunes enfants. Le même sujet peut en être atteint un nombre indéterminé de fois, c'est le caractère de cette fièvre infectio-contagieuse.

Les sels de quinine m'ont paru être le moyen prophylactique par excellence. En 1893, j'observai que les malades soumis dans nos salles, à l'usage des sels de quinine, furent les seuls préservés. De là l'idée d'en faire un agent prophylactique, et mes expériences sur ce point m'ont toujours réussi.

Quant au traitement, depuis l'année dernière, je combats la fièvre d'Influenza, compliquée ou non de broncho-pneumonie, par une ou plusieurs applications d'un mélange de Liniment d'Iode et de l'huile de Gaïacol. La proportion du mélange chez l'adulte est de 40 gouttes de Liniment d'Iode pour 10 gouttes de Gaïacol. Le badigeonnage fait sur la région sternale ou sur le point douloureux, est immédiatement recouvert d'un tissu imperméable ou d'une feuille végétale, maintenue en contact à l'aide de la main sur le vêtement, pendant 15 ou 20 minutes, pour empêcher l'évaporation. Une transpiration abondante se produit alors, si la dose de Gaïacol est suffisante, qui abaisse la température de 2 à 3 degrés; il n'y a plus qu'à donner un grog pour combattre les effets de la sudation, et, de la quinine combinée à la teinture d'Aconit 15 à 20 gouttes, pour combattre l'infection:—ce qui n'empêche pendant un jour ou deux, de soumettre le malade le soir à une dose de Calomel et de Dover à 0 gr. 10 centigrs. et les 2 jours suivants à un purgatif huileux le premier jour, salin le deuxième jour avec une dose de Quinine. Le chloral-bromuré est très utile pour favoriser le sommeil et

calmer la toux. En général trois jours de ce traitement mixte suffisent contre la plus forte crise d'influenza. L'infusion de thym est la meilleure boisson, avec addition d'une préparation alcoolique. Le Gaïacol, malgré la coloration verdâtre des urines qu'il détermine quelquefois, ne produit jamais l'albuminurie.

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C. LES ALBUMINURIES.

Avant l'année 1893, les néphrites albumineuses s'observaient, mais elles étaient relativement rares, et le plus souvent curables; elles paraissent causées le plus souvent par l'alimentation des Indiens et des Créoles de la classe inférieure, riche en toxines: viandes et poissons salés, très souvent en partie putréfiés, fruits cueillis avant maturité et vendus à l'état de fermentation, en voie de décomposition. Des dermatoses, conséquence de ce régime et de la malpropreté causaient parfois des albuminuries graves.

Depuis 1893, c'est-à-dire la grande et grave épidémie d'influenza, les cas d'albuminurie à l'hôpital de Moka ont très notablement augmenté, et comme les malades arrivent le plus souvent à une époque très avancée de leur mal, la mort en est aussi souvent la conséquence.

La plupart des décès par néphrites albumineuses (Bright's disease) ont été suivis d'autopsie. Il m'a été ainsi permis de faire de véritables trouvailles d'amphithéâtre, que je n'ai vu consignées dans aucun ouvrage.

En dehors des petits reins atrophies, des gros reins blancs, j'ai vu des reins transformés en kystes géants, contenant plus de deux litres d'un liquide séro-sanguin, séro-purulent, avec quelques débris de détritits organiques; des reins transformés en foyers purulents avec coques calcaires. Chez un Polonais, garde monté au Réduit, atteint d'albuminurie d'origine alcoolique, mort par lieuterie, — j'ai trouvé le rein droit atrophie, du poids de 16 grammes, et le gauche transformé en un foyer purulent recouvert d'une coque calcaire. — Les causes de ces albuminuries sont variées; si depuis l'influenza de 1893, elles sont plus nombreuses, j'estime que les boissons adultérées (vins, bières, porters, eaux-de-vie), les viandes conservées fortement altérées, jouent le rôle le plus important dans leur genèse. Par l'absence d'un laboratoire colonial, d'un laboratoire de bactériologie, Maurice devient chaque jour de plus en plus le *refugium* des falsifications de toutes sortes, s'étendant jusqu'aux produits pharmaceutiques principalement les spécialités (*patent medicines*).

Traitées de bonne heure, ces albuminuries, avec œdèmes, — dyspnée, bruit de galop, prurit, peuvent guérir. Le point principal est d'en trouver la cause. Cependant, nous avons des armes pour les combattre.

Le régime d'abord, — le régime lacté, puis la proscription des viandes fortes et des salaisons.

MAURITIUS,
1899.

La digitale, la décoction de barbes de maïs, l'iode de Potassium ou de Sodium, les bromures, la Scille, la Caféine, la Spartéine, la Lactose sont les médicaments dont il faut savoir se servir. Les ventouses sèches ou scarifiées sur les reins aident aux effets des médications.

Si urémie, la diète hydrique—eau de barbes de maïs en solution saline (7 g. de chlorure de sodium pour un litre de cette décoction, en boissons). Sur les reins et à la base des poumons—des ventouses scarifiées, pour calmer l'oppression, les injections d'éther, pour alimenter la lactose, le lait.

Lorsque le régime lacté n'est plus nécessaire, les viandes blanches, les légumes et le vin diurétique de Trousseau nous ont rendu de réels services.

Il serait très intéressant de faire la pathogénie aussi précise que possible des néphrites albumineuses que nous observons ainsi depuis quelques années; je le répète—l'établissement de laboratoires de bactériologie et d'analyses des aliments liquides et solides, des médicaments, est absolument nécessaire à cet effet. Je viens d'observer à l'hôpital de Moka un cas de néphrite avec hématurie et albuminurie très grave. Le diagnostic en a été facile; le jeune homme qui en était atteint m'offrait les signes habituels d'œdèmes de la face et des membres: il était de plus atteint de parésie des membres du côté droit; les articulations du coude et du genou droits étaient douloureuses et tuméfiées, la dyspnée était grande avec toux fatigante. Le cœur battait en bruit de galop, il y avait pollakiurie, et 400 grammes d'urines dans les 24 heures. Ce jeune homme habitant Moka, était allé servir en ville pour le service de la peste à titre de garde spécial; sans avoir éprouvé de fièvre, il a été forcé de quitter son service pour venir se faire traiter à Moka. Je n'ai observé chez lui aucun signe de malaria. Il avait de l'hydrémie sans mélanémie, la rate était à peine augmentée de volume. J'aurais bien voulu pouvoir faire la cause de cette néphrite albumineuse et hématurique. Je l'ai traitée en faisant plutôt la médecine des symptômes. Par la digitale à haute dose unie à la scille, à l'iode et au bromure, par le régime lacté, les ventouses sur les reins,—la caféine et l'éther nitreux, la strychnine, j'ai pu élever rapidement le taux urinaire, calmer l'oppression et les battements du cœur. Mais il m'a fallu recourir bientôt aux toniques; le vin diurétique, le tannin, l'ergot et l'hydrastin—et même le perchlorure de fer dans du lait à la dose de 20 gouttes de teinture par jour. Finalement, c'est-à-dire après 2 mois de traitement, la guérison s'est effectuée. Ce fut une lutte bien difficile pour moi, et, la cause de cette néphrite infectieuse me reste encore inconnue: pas de gonorrhée, pas de coups sur les reins, pas d'alcoolisme, pas de malaria; il ne me reste que l'alimentation viciée par les aduérations des liquides et des solides, et par la position précaire du sujet.

Les albuminuries malariales sont peu fréquentes. Le perchlorure de fer dans du lait, le vin de quinquina additionné de

tannin,—réussissent à les combattre rapidement. Plus rares sont les albuminuries syphilitiques que le mercure et l'iodure de potassium parviennent à guérir. Les albuminuries d'origine alcoolique, qui ne sont pas liées à la cirrhose atrophique du foie, sont rebelles et sujettes à récidive. MAURITIUS, 1899.

D. DYSSENTERIES.

La dysenterie dans mon opinion n'est pas une maladie spéciale, c'est un symptôme. Tout individu qui rend avec effort du sang, du mucus, est considéré comme atteint de dysenterie.

C'est la cause qui fait la maladie, et par suite le traitement. Les lépreux finissent par une dysenterie particulière, les Brightiques souvent, par une dysenterie lieutérique.—Les indigestions de fruits verts occasionnent chez les enfants des dysenteries qui, négligées deviennent putrides et contagieuses. Les vers lombrics causent souvent un état dysentérique, qui disparaît avec un vermifuge doux. Certains purgatifs mal administrés donnent lieu à une colite de forme dysentérique. La syphilis, la malaria, la tuberculose peuvent créer des dysenteries.

La dysenterie des pays chauds, à part l'analyse bactériologique ou microscopique, qui n'est pas encore faite, se caractérise par un état bilieux manifeste (altérations de la sécrétion biliaire) produisant des selles fréquentes, très acides, mêlées de glaires, de sang, de bile verte et une diminution des matières fécales.—C'est cette forme causée par les transitions brusques de température chez les personnes à prédominance bilieuse qui mérite le mieux le nom de Dysenterie—que nous traitons le plus souvent dans les hôpitaux ou dans notre clientèle privée.

Comme toute maladie, elle est bénigne et apyrétique, grave et fébrile,—elle est aiguë ou chronique.

À l'hôpital de Moka, il nous arrive rarement d'avoir à traiter des cas de dysenterie aiguë des pays chauds. Ce sont surtout des chroniques arrivés au bord de la tombe qui nous arrivent émaciés et le plus souvent incurables.

La dysenterie bénigne, apyrétique est rapidement curable—deux ou trois doses de manne ou d'huile de palma mêlée d'huile d'olive précédées la veille d'une petite dose de calomel et de Poudre de Dower réussissent chez les enfants et chez les adultes.

La dysenterie aiguë, avec fièvre, et état saburral trouve son traitement le plus efficace, dans l'Ipéca concassé infusé la veille dans 20 grammes d'eau bouillante avec digestion (4 grammes pour un adulte). Le même Ipéca traité de la même manière pendant 4 jours de suite, précédé à chaque fois du mélange calomel et Dower. Le malade en prend chaque matin 1 cuillerée à café de $\frac{1}{2}$ en $\frac{1}{2}$ d'heure. Le régime est sévère. Bouillon de soupe, lait coupé, tisane d'orge et de *sièges cecilia orientalis*,

MAURITIUS,
1899.

Les lavements d'Ipéca laudanisés m'ont rarement réussi. La dysenterie chronique a contre elle deux traitements de valeur. Les grands lavements antiseptiques de 600 grammes à un litre d'eau chaude infusée sur thym, pour modifier l'état du rectum et du colon, le vin du Dr. Bernard, produit par une macération dans du vin, d'écorces de Grenade, de Quinquina, de Simarouba, de Réglisse, ce vin porte aussi le nom de vin du Dr. Mailloux—3 cuillerées à dessert dans les 24 heures; l'une matin, l'autre l'après-midi, la troisième le soir. Pour boisson une légère infusion de Simarouba—pour régime du bouillon de soupe.

L'autre traitement est celui de Linné, dit aussi du Dr. Lagravelle—c'est l'Anderjoa. Je le donne sous la forme d'un sirop préparé pour adulte avec Anderjoa 5 Grammes (2 Grammes 50 simplement pulvérisés,—2 Grammes 50 de graines préalablement grillées, et ensuite pulvérisées).

Ces 5 grammes sont bouillies dans 200 grammes d'eau réduite à 120 grammes qui restent en digestion pendant 12 heures. Le sucre est ajouté pour faire par ébullition, 60 grammes de sirop.

Le matin à jeun de $\frac{3}{4}$ en $\frac{3}{4}$ d'heure 1 cuil : à dessert de ce sirop édulcoré une tasse à café de mucilage léger d'arrowroot additionné de 0.15 centigrs. de magnésie calcinée.—La dose est de 3 cuillerées à dessert dans la matinée. Une heure après le malade prend un premier repas et bouillon de soupe ou de viande bien cuite, de l'eau vineuse pour boisson.—Deux heures après ce repas, il prend 2 nouvelles cuillerées à dessert du sirop dans son eau d'arrowroot magnésienne à $\frac{3}{4}$ d'heure d'intervalle. Une heure après il fait son second repas. La dernière cuil : à dessert est donnée dans la soirée.

Le lait, les œufs sont prohibés dans ce traitement. L'eau vineuse sert de boisson.

Ces deux traitements, je le répète, réussissent merveilleusement lorsque le malade n'arrive pas à l'état putride.

E.—LES TUBERCULOSES.

A l'hôpital de Moka, je n'ai eu à traiter cette année que la tuberculose pulmonaire. Elle est très répandue à Maurice comme dans tous les pays civilisés. Je l'ai toujours considérée comme étant de nature exclusivement contagieuse; l'hérédité ne doit être envisagée que comme cause prédisposante, terrain favorable à l'action du bacille de Kock.

Le climat de Moka, et particulièrement à l'hôpital de Moka, est contraire à son traitement.

La création de Sanatoria spéciaux, comme je l'ai souvent écrit dans différents rapports officiels depuis 13 ans, s'impose ici comme dans tous les centres civilisés.

Ces sanatoria doivent être choisis sur le littoral ou dans les régions élevées de l'Ile; selon la forme torpide ou aiguë de la maladie.

L'admission dans nos hôpitaux, en salle commune, d'un tuberculeux est en opposition avec les lois de l'hygiène. Depuis 1886, époque de la création de l'hôpital, j'ai vu quatre cas de contagé chez nos infirmiers, trois en sont morts. La mortalité dans nos salles est la règle, si non la loi—contre les formes aiguës, contre les formes apyrétiques,—nous pouvons dans notre service obtenir des améliorations, mais ces améliorations ne peuvent être que passagères; les convalescents nous quittent pour nous revenir ou s'en aller mourir ailleurs.

L'aération est le traitement de choix, bien difficile à mettre en pratique à l'hôpital de Moka.

Les applications cutanées de Gaïacol et de Liniment d'Iode avec obstacle à l'évaporation réussissent à combattre la fièvre, jusqu'à un certain point; les apéritifs, les injections sous-cutanées d'huile camphrée créosotée et morphinée, les lavements d'huile créosotée, nous permettent quelquefois d'obtenir des améliorations. Alors, si le malade peut s'alimenter et se nourrir il peut arriver à un état très satisfaisant. Mais, ce n'est pas dans nos hôpitaux officiels que nous pouvons conduire ces expériences d'une manière scientifique, convenable. Des sanatoria spéciaux sont nécessaires.

F.—FIÈVRE TYPHOÏDE.

L'hôpital de Moka reçoit rarement des cas de fièvre typhoïde.—En l'absence d'un pavillon spécial pour les maladies contagieuses, les cas de fièvre typhoïde ne nous sont adressées que par erreur de diagnostic. La fièvre typhoïde est endémique, et très rarement épidémique, dans ce cas, sous forme locale;—il en résulte que primâ facie, le diagnostic est le plus souvent incertain. C'est par exclusion que se fait le plus souvent ce diagnostic qui ne peut être confirmé par un laboratoire de bactériologie, depuis si longtemps réclamé vainement.

Nous sommes donc parfois dans la nécessité de recevoir, et de traiter des cas de fièvre typhoïde à l'hôpital.

Heureusement, la prophylaxie en est facile,—et en ayant soin de faire uriner, dans des vases contenant du lait de chaux, de traiter de même les selles, d'exercer une grande surveillance sur les draps, les linges, etc. nous n'avons jamais vu la propagation de cette pyrexie à bacilles dans notre hôpital. Prise à temps, la fièvre typhoïde à Maurice, traitée avec une grande sollicitude, guérit dans l'immense majorité des cas. Si nous n'avons pas encore de sérum ou de spécifique, nous possédons du moins dans l'usage attentif, expérimental, des antiseptiques et des antithermiques, des armes de combat réellement efficaces.

Au commencement de cette année, à l'hôpital même, j'ai été appelé à remplacer la balnéothérapie par des applications de Gaïacol, anti-thermique par sudation, qui prudemment appliqué, n'agit ni sur le cœur, ni sur les reins. Le Gaïacol vaut la peine d'être expérimenté, ainsi qu'il résulte des succès qu'il m'a toujours donnés.

MAURITIUS,
1899.

Depuis 18 mois, j'avais obtenu contre la fièvre des tuberculeux, à l'aide de badigeonnages de Liniment d'Iode, et d'huile de Gaïacol, en ayant soin d'en prévenir l'évaporation par l'application d'une feuille végétale, une sudation proportionnée au nombre de gouttes employées, et au degré thermométrique et par suite une hypothermie favorable au malade et à l'évolution du mal. Au mois de Janvier dernier un enfant de 11 ans fut envoyé à l'hôpital par le dispensaire des Pailles, dans un état misérable. Il était malade depuis deux semaines environ, l'émaciation était notable: la fièvre oscillait entre $38^{\circ} 5$ et $39^{\circ} 5$, le ventre était météorisé, et le tympanisme était péritonéal; les douleurs abdominales étaient vives, il avait des vomissements fréquents, la langue sèche et vermissée; le pouls était petit et rapide. Les urines albumineuses. Force me fut de combattre les douleurs et les vomissements par des injections hypodermiques de chlorhydrate de morphine; et à défaut de renseignements, comme l'enfant toussait, je crus à une péritonite tuberculeuse; je fis un badigeon de 10 gouttes de Gaïacol sur l'abdomen, et par dessus, une application de collodion iodoformé! Un quart d'heure après l'enfant transpira abondamment, la température de $39^{\circ} 5$ tomba à $37^{\circ} 5$. Ainsi calmé, il put garder du sérum artificiel (eau additionnée de chlorure de sodium à 7 pour 1,000), additionnée d'un blanc d'œuf pour 100 grammes de serum.

J'eus à lutter ainsi pendant 4 ou 5 jours, à l'aide d'une ou deux injections d'un centigramme de morphine, et de deux applications de Gaïacol recouvert de collodion iodoformé, diète hydrique, albumineuse et chlorurée sodique bientôt aidée par de petites doses de lait additionné d'eau de chaux. Le météorisme disparut, les vomissements cessèrent, la fièvre se modéra, les urines devinrent normales. Je croyais, dis-je, à un cas de péritonite tuberculeuse, en voie de guérison. Quand arrivèrent en même temps à l'hôpital la sœur du petit malade et deux jeunes frères, tous trois manifestement atteints depuis cinq jours de fièvre typhoïde.

Evidemment le petit Dawood était atteint depuis 14 jours d'une fièvre entérique avec perforation intestinale.

Immédiatement je commençai sur les trois enfants, la sœur âgée de 13 ans, les deux frères 9 et 7 ans le traitement suivant:— Pendant 3 soirs calomel et Dower à 0.10 centigrs. Hydrate de chloral 0.50 à 1 gramme dans de l'orge pour favoriser le sommeil; chaque matin un léger seidlitz dans du café, avec 0.10 centigrs. de citrate de caféine, 0.20 à 0.30 centigrs. de Sulfate de Quinine. Contre les élévations thermiques 1 à 2 applications d'huile de Gaïacol sur l'abdomen—7 à 14 gouttes, sous feuille végétale pour empêcher l'évaporation, et produire au bout de 15 minutes une sudation suffisante pour abaisser la température de 2 degrés. Si la transpiration était trop grande, j'administrerai un grog au rhum. Chaque soir je faisais l'antisepsie intestinale au moyen d'une dose de Benzo-Naphthol et de Salicylate de Bismuth à 0.25 centigrs. et j'administrerai un grand lavement de 600 grammes

d'infusion de thym à température de 20° à 22° Centigr. Au 14^{me}. jour de la maladie sous l'influence de cette médication, la température vespérale pathologique varia entre 38° 2 et 38° 5.— Dès le 15^{me}. jour, je n'eus plus besoin de recourir au Gaïacol. En continuant le même traitement—du bouillon de soupe, un peu de vin de Quinquina, et des lavements frais de thym en sérum artificiel, la défervescence s'accrut pendant la 3^{me}. semaine, au 21^{me}. jour, sommeil, selles, température, urines—tout était à l'état normal.

Au MAURITIUS,
1899.

Il ne me resta plus qu'à suivre leur régime alimentaire pendant la 4^{me}. semaine, au bout de laquelle ils étaient tous trois, guéris, pendant que Dawood engraisait et se fortifiait à vue d'œil.

Dans le courant de cette année j'ai reçu encore deux enfants atteints de fièvre typhoïde—le 1^{er}. âgé de 5 ans, soumis au traitement précédent a fait 14 jours de fièvre, le 2^{me}. âgé de 15 ans arrivé au 12^{me}. jour, a fait en tout 20 jours de maladie.

Il m'a été donné de traiter encore quelques cas de fièvre typhoïde—1^o. chez une dame de 49 ans, 2^o. chez un adulte de 36 ans et enfin chez un jeune homme de 19 ans, et j'ai eu à me louer de l'usage du Gaïacol comme anti-thermique par sudation, et comme modificateur des urines albumineuses.

Le point essentiel, comme d'ailleurs à l'aide du traitement par l'eau froide, est de savior l'appliquer, thermomètre en mains, à doses proportionnées, selon la manière dont la fièvre se défend.

Bien que diminuant le taux des urines, leur donnant parfois une coloration légèrement brune ou verdâtre, le Gaïacol comme je l'ai dit ne produit jamais d'albuminurie, il y a mieux, il fait disparaître l'albumine des urines. Pour remplacer l'eau perdue par la transpiration, par les évacuations alvines, il existe un moyen précieux, c'est le lavement frais antiseptique, et contenant du chlorure de sodium dans la proportion du sérum artificiel.

Il peut arriver que pendant le traitement au Gaïacol, les malades reprennent la fièvre avec un frisson plus ou moins intense. Ce n'est pas une raison pour en suspendre l'emploi. On réchauffe alors le malade avec des couvertures, des bouteilles chaudes, et, on applique le Gaïacol à moindre dose aussitôt le retour du stade de chaleur.

Voici quel est depuis le commencement de cette année mon traitement systématique de la fièvre typhoïde avec le Gaïacol au lieu de la balnéothérapie.

Sitôt la fièvre typhoïde constatée; le calomel la nuit comme antiseptique intestinal (le mercure d'après Widal et Chantemesse étant mortel pour le bacille d'Eberth). Le calomel est donné à la dose de 0.06 à 0.12 cent. en 2 ou 3 prises. Si agitation, et

MAURITIUS, 1899. insomnie l'hydrate de chloral. Le matin suivant, si état nauséux et langue saburrale, un Ipéca à dose vomitive, le jour suivant de l'huile de palma, le 3me. jour un Seidlitz. Traitement des 3 premiers jours—pour boisson le jour, orge, limonade vineuse au jus de citron—pour régime, lait—bouillon de soupe léger, chaque après-midi un mélange de Benzo-Naphtol et de Salicylate aa 0.25 aa 0.50.

Le Gaïacol est administré à jeun, après l'effet du purgatif, en gouttes sur le ventre ou sur la poitrine, avec ou sans huile d'olive en ayant soin de recouvrir immédiatement la partie huilée d'une feuille végétale ou d'une pièce de taffetas gommé. La dose première est de 10 gouttes pour adulte. La sudation se produisant au bout d' $\frac{1}{4}$ d'heure, on ajoute de 5 en 5 gouttes de 15 en 15 minutes, jusqu'à effet produit.

Lorsque le malade est rafraîchi par la sudation, un grog chaud au rhum lui est administré, et s'il se refroidit, je lui fais mettre des bouteilles chaudes aux extrémités qui sont frictionnées. La température baisse ordinairement de deux degrés. Dès que le thermomètre remonte—avec ou sans frisson initial,—au dessus de 38° 5, le Gaïacol est réappliqué en se conformant aux règles précédentes, pendant 8 jours,—il arrive d'avoir à se servir du Gaïacol, deux à trois fois par 24 heures. Je ne l'ai appliqué à l'hôpital que 2 fois dans la journée. Ne médicamentant les malades la nuit que pour favoriser le sommeil, c'est à un mélange de chloral et de morphine que je m'adresse au besoin, pendant tout le cours de la fièvre, je donne le matin un léger Seidlitz, et une petite dose de sulfate de quinine dans du café; si le cœur semble faible et même pour favoriser la diurèse j'y ajoute du citrate de caféine de 0.10 à 0.20 centigrs. et parfois le soir je donne 0.03 de sulfate de spartéine pour tenir le cœur en tension.

Il m'est arrivé chez quelques malades, même en l'absence de toute influence malariale d'avoir avant la reprise de la fièvre, un violent frisson. Le Benzoate d'Ammoniaque, l'acétate d'ammoniaque liquide, avec du rhum unis à des couvertures chaudes, ont fait disparaître cette pénible sensation de froid.

Parmi mes malades à l'hôpital, je n'ai pas observé d'hémorrhagie intestinale. Dans ma clientèle privée, chez un malade vu pour la première fois au 21me jour, atteint d'hémorrhagie intestinale, j'ai appliqué le Gaïacol avec succès, les compresses froides sur le ventre, les injections d'Ergotine; d'Hydrastis, l'Ergot et l'Hamamélis combinés à l'intérieur, ont fait disparaître la crise hémorrhagique.

C'est au lait de chaux dans les vases qui reçoivent les matières excrémentitielles que je m'adresse pour la prophylaxie de la fièvre typhoïde dans le voisinage. Une propreté excessive des

malades et des linges est rigoureusement faite.—Néanmoins, **MAURITIUS**,
j'estime que les cas fièvre typhoïde, ne doivent pas être traités
en salle commune. 1899.

G. ALCOOLISME.

En dehors des albuminuries—dont nous avons cru trouver l'étiologie dans l'alcoolisme et surtout dans les boissons alcooliques adultérées dont l'Ile Maurice abonde—par suite de l'absence d'un laboratoire spécial, ainsi que nous l'avons établi,— nous avons à traiter dans nos hôpitaux des altérations du foie qui n'ont pour cause que l'alcool.

1°. La cirrhose atrophique; 2°. l'hépatite avec prédominance de l'élément sanguin, 3°. l'hépatite avec prédominance de l'élément graisseux, ces deux dernières formes atteignent de préférence les marins Européens qui viennent mourir à l'hôpital avec un état gastrique rebelle à tout traitement.

La cirrhose atrophique, incurable, lorsqu'elle a atteint un degré très avancé de marasme avec ascites très avancées, peut être provisoirement du moins guérie, lorsque le malade se présente pour la première fois, même à la période ascitique.

Dans le premier cas lorsque la nutrition est devenue impossible, c'est la mort, à échéance plus ou moins éloignée, en dépit des paracentèses multiples.—Dans le second cas, voici la médication qui m'a le mieux réussi: en 20 jours de traitement systématique, j'ai obtenu une guérison; au moins momentanée, et que je vais résumer ici.

Régime—riz, pain, légumes, lait 1.25 centil. 1 œuf.—Médicaments:—chaque nuit 1 pilule de 0.06 centigrs: de calomel et 0.06 centigrs: de Dower—Tisane orge nitrée 0.50 centigrs: par 3 verres.—2 fois la semaine pendant la première semaine 0.50 centigrs. de Scammonée, et pendant 20 jours entre 9 heures du matin et 5 heures du soir une potion contenant Digitale 30 gouttes, Ether nitreux 2 grammes, Iodure de potassium 1 gramme, pour 60 grammes d'eau, en 3 doses, pendant le jour. Au bout du 20me. jour, j'avais 2 litres d'urines par 24 heures, 1 selle normale—et la disparition de toute trace d'hydropisie. Le malade fut alors soumis pendant 7 jours avant sa sortie, à un régime différent—c'est-à-dire du bœuf au lieu de lait, puis au régime de créole normal. Il était parfaitement bien à sa sortie.

Nous n'avons eu en fait d'opération chirurgicale, qu'une amputation de la jambe, chez un indien, à la suite d'un écrasement irrémédiable du pied par une roue de wagon. Cet homme est arrivé trop tard à l'hôpital, c'est-à-dire 20 heures après l'accident,—déjà, en proie à une phlébite du membre lésé. Cependant nous lui avons fait l'amputation, mais, bien que l'opération ait

MAURITIUS, été des plus simples, sans perte de sang, et en l'absence du chloroforme puisque le malade était trop faible, il a succombé 12 heures après.
1899.

En dehors de la phlébite, cet homme avait un cancer déjà avance de l'estomac (autopsie).

ENTÉRITE CHEZ LES ENFANTS, ATHREPSIES.

Nous avons enregistré plusieurs décès chez les enfants atteints de Lieutérie, suite d'athrepsie, le plus souvent causées par la misère. Quand les enfants arrivent à l'état aigu, le collodion iodé sur le ventre, la diète hydrique (sérum artificiel albumineux) lavements de sérum additionnés d'élixir parégorique nous ont rapidement réussi; mais sous la forme chronique. Je n'ai obtenu de résultat favorable qu'avec des boulettes de viande crue assaisonnées de sel de cuisine, et en favorisant la digestion à l'aide du sirop de lait de papaye dans une eau légèrement alcaline. Le sirop de lait de papaye se prépare à 1/5^{me}, lait de papaye fraîchement obtenu par scarification des fruits verts, et battu intimement avec le sirop. Ce sirop doit être donné dans un véhicule—eau additionnée d'eau de chaux; pris pur, il exciterait des vomissements. Le lait de papaye agit ainsi comme la papaïne, jouissant d'une puissance digestive admirable. Depuis 15 ans que je l'administre ainsi, j'en ai toujours obtenu des effets supérieurs à ceux que donne la pepsine pure.

La tridigestine (pepsine, pancréatine et diastase) est d'une préparation trop instable. Elle ne se conserve pas dans notre climat.

I. ANÉMIE.

Dans les cas d'anémie malariale, avec hydrémie, mélanémie, en dehors du chlorhydrate de quinine, qui s'assimile mieux que tous les autres sels de quinine, le perchlorure de fer dans du lait m'a donné des résultats qui valent la peine d'être connus.

Un enfant de deux ans peut prendre 30 gouttes de perchlorure de fer par jour en 3 doses dans du lait, qui se trouble il est vrai, mais la digestion en est facilitée, au point que la constipation souvent fait place à la diarrhée. Chez une femme d'une trentaine d'années, j'ai ainsi obtenu une véritable résurrection. C'est à mon avis le meilleur moyen de faire assimiler le fer.

I. DERMATOSES.

Elles sont communes à Maurice. Elles peuvent se diviser en syphilitiques, Arthritiques, parasitaires.

Syphilitiques, elles relèvent des agents spécifiques.

Arthritiques, elles sont produites par les ingesta chez des MAURITIUS, 1899.
 natures prédisposées—elles sont alors très lentes à se modifier.
 C'est par le régime lacté, les benzoates de Soude et de lithine,
 une alimentation de pain, de riz, de légumes, de lait, de volaille.
 Le cabri, les viandes fermentées, le poisson doivent être
 proscrits.

Parasitaires, elles sont très rares. Je n'ai jamais vu dans mon service à l'hôpital de Moka, un cas de gale (*Acarus Scabici*). Mais de l'ecthyma aux mains et aux pieds,—assez souvent et, la propreté, l'onguent jaune de mercure, les lavages à la solution de Bi-iodure à 1/5,000 donnent de bons résultats.

J'administre le soufre à l'intérieur, 0.50, matin et soir. Sous l'influence de cette médication anti-parasitaire, l'ecthyma guérit en 10 jours (moyenne).

DR. EUG. VINSON, M.D.

15 Janvier 1900.

RETURN of the STATISTICS of POPULATION for the YEAR 1899.

	General Population.			Indian Population.	
	Europeans, Whites, Africans, Mixed and Coloured.	Chinese.		Creole Indians.	Immigrants.
Number of inhabitants in 1898 (on 31st December)	114,554	3,096		196,075	65,147
" births during the year 1899	4,231	62		8,878	1,772
" deaths "	4,304	228		6,817	3,000
" immigrants "	1,162	806		1,165	—
" emigrants "	802	659		939	613
Number of inhabitants in 1899 (on 31st December)	114,841	3,077		198,362	63,306
Increase...	287	—		2,287	—
Decrease...	—	19		—	1,841

METEOROLOGICAL RETURN for the YEAR 1899.

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MAURITIUS,
1899.

	Temperature at Royal Alfred Observatory.							Rainfall.		Winds.		Remarks.			
	Solar		Minimum	on Grass.	Shade	Maximum.	Shade	Minimum.	Range.	Mean.	Amount in inches.		Degrees of Humidity.	General Direction.	Average Force.
	Maximum.	Minimum.	°	°	°	°	°	°	°	°	°		°	Miles per hour.	
January	163.0	63.8	91.6	67.7	23.9	79.6	2.18	74.6					E.S.E. & E.b.S.	13.0	Rainfall, 69 per cent. below average.
February	162.3	63.2	92.4	65.8	26.6	78.3	7.24	81.9					E.E.b.N. & var.	9.7	
March	163.8	65.3	89.3	68.6	20.7	78.4	12.13	81.3					E.S.E. to E.b.N. & var.	10.3	Rainfall, 47 per cent. above average.
April	153.1	56.9	88.3	59.8	28.5	77.2	4.61	77.8					E.S.E. to E.b.S.	9.9	
May	153.6	52.1	86.8	56.1	30.7	73.0	1.73	77.3					S.E.b.S., S.E.b.E., E.S.E. & var.	9.8	
June	149.8	48.2	82.7	51.7	31.0	69.0	1.63	74.6					S.E.b.E. & E.S.E.	10.2	Thunder on June 6th ; distant but distinct.
July	144.7	52.0	80.6	56.6	24.0	68.9	2.93	72.8					E.S.E.	13.9	Velocity of wind, 21 miles above average.
August	145.8	51.9	80.4	55.7	24.7	69.0	3.40	74.6					E.S.E.	13.8	Rainfall, 39 per cent. above average.
September	153.0	51.5	84.4	56.6	27.8	70.9	1.68	73.9					E.S.E.	11.8	
October	155.0	53.5	86.5	56.7	29.8	71.3	2.25	78.4					S.E.b.E. to E.b.N.	9.3	
November	157.2	55.8	88.9	60.2	28.7	76.6	1.73	73.8					N.E.b.N. to S.E. & N.W.	8.6	Velocity of wind, 2.1 miles below average.
December	156.2	58.6	92.8	63.8	29.0	79.0	1.31	71.0					S.E. b.E. to E.b.N.	11.2	Rainfall, 73 per cent. below average.

* Absolute, not mean, values.

† Mean of 6 + 15 h.
Cyclones occurred on January 4-9, March 3-9, and December 9-22.

MAURITIUS, RETURN of DISEASES and DEATHS in 1899 in PUBLIC
 1899. HOSPITALS, MAURITIUS.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES—			
Plague... 	66	32	
Small-pox 	—	—	
Chicken-pox 	3	—	
Measles 	—	—	
Typhus 	—	—	
Dengue 	—	—	
Influenza 	783	35	
Diphtheria 	2	—	
Febricula 	6	—	
Enteric Fever 	26	6	
Cholera 	—	—	
Dysentery 	606	106	
Yellow Fever... 	—	—	
Malarial Fever—			
(a.) Intermittent 	3,969	109	
(b.) Remittent 	134	1	
(c.) Pernicious R. 	49	8	
Erysipelas 	46	6	
Pyæmia 	2	2	
Septicæmia 	8	5	

Return of Diseases and Deaths—cont.

MAURITIUS,
1899.

Diseases.	Yearly Total.		Remarks
	Cases.	Deaths.	
GENERAL DISEASES— <i>cont.</i>			
Tetanus 	9	4	
Tubercle 	57	12	
Leprosy—			
(<i>a.</i>) Tubercular 	7	1	
(<i>b.</i>) Anæsthetic 	5	—	
Yaws 	—	—	
Syphilis—			
(<i>a.</i>) Primary 	213	4	
(<i>b.</i>) Secondary 	146	4	
(<i>c.</i>) Inherited 	20	1	
Gonorrhœa 	139	—	
Hydrophobia 	—	—	
Scurvy 	—	—	
Alcoholism 	20	—	
Delirium tremens 	4	—	
Rheumatism 	505	4	
Rheumatic fever 	—	—	
Gout 	—	—	
New growth, non-malignant 	38	1	
New growth, malignant 	46	8	
Anæmia 	322	17	
Diabetes mellitus 	24	7	
Diabetes insipidus 	2	—	
Debility 	504	80	
Other diseases 	539	33	

MAURITIUS,
1899.*Return of Diseases and Deaths—cont.*

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES—			
DISEASES OF THE NERVOUS SYSTEM—			
Diseases of the Nerves—			
Sub-section 1—			
Neuritis	5	—	
Meningitis	19	11	
Myelitis	41	5	
Hydrocephalus	1	—	
Encephalitis	—	—	
Abscess of Brain	—	—	
Congestion of Brain...	39	17	
Sub-section 2—			
Functional Nervous Disorders—			
Apoplexy	22	12	
Paralysis	46	4	
Chorea	4	1	
Epilepsy	202	5	
Neuralgia	123	—	
Hysteria	6	—	
Sub-section 3—			
Mental Diseases—			
Idiocy	14	—	
Mania	86	—	
Melancholia	23	—	
Dementia	20	—	
Delusional Insanity ...	4	—	

*Return of Diseases and Deaths—cont.*MAURITIUS,
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Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES—cont.			
Diseases of the Eye	252	—	
" " Ear	39	—	
" " Nose	7	—	
" " Circulatory System	217	57	
" " Respiratory System	1,902	257	
" " Digestive System ...	1,001	105	
" " Lymphatic System	298	7	
" " Urinary System ...	330	53	
" " Generative System—			
Male Organs ...	240	2	
Female " ...	132	3	
" " Organs of Locomotion.	141	4	
" " Cellular Tissue ...	536	9	
" " Skin... ..	666	1	
Injuries, General	73	3	
" Local	908	10	
Surgical Operations	400	11	
Malformations	—	—	
Poisons	5	—	
Parasites... ..	85	1	
	16,187	1,064	

NEGRI SEMBILAN.

REPORT ON THE MEDICAL DEPARTMENT, 1899.

(Extract.)

I.—GENERAL.

1. The year was unmarked by any important epidemic and there has been less mortality than usual.

Vital Statistics.

2. The registration of births and deaths of immigrants and emigrants is as yet far from perfect, so that it is impossible to form any accurate estimate of these important factors.

3. In estimating the population to-day, starting from the census of 1891, many gaps occur in the returns which have to be filled in by probable averages gathered from later sources. But I think that the estimate of population, which I have carefully worked out, in this manner, will be found fairly close to the reality, when that becomes determinable by a fresh census. Moreover, the general conclusions which may be drawn from a survey of the tables are such that their general truth will not be vitiated by even a large margin of error.

4. The total number of inhabitants of the Negri Sembilan thus estimated, was on 1st January, 1899, 77,883, and had increased by the end of the year to 83,598, chiefly through immigration of coolies, four-fifths of whom are Chinese.

Birth and Death Rates.

5. The number of deaths recorded exceeded the births, the former being rated at 24 and the latter at 26 per thousand living. So bald a statement affecting a mixed population, of which the different sections live and labour under widely different conditions, of course conveys an impression which is far from representing our true vital statistics.

I have therefore compiled tables (in appendix) which show the mean rates of birth and death, and the proportion contributed to the total number of both these factors for each different section of the population; and also the relative proportions in which each seeks admission to hospital, as giving some index of prevailing sickness-rates.

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Births.

6. From these tables it may be gathered that natural growth of population is provided wholly by the Malays, the births among whom constitute more than nine-tenths of all births recorded, the mean rate being 34 per thousand. The births contributed by all other races were insignificant in number, and the rates shown for Eurasians and Indians are surprisingly low (15 and 13 per mille, respectively).

Deaths.

7. The mean rate for the country (26 per thousand of all persons living) is by no means excessive, and is exceeded constantly by that of several European countries, and (at the moment I write) by that of London and many other parts of England, the Straits Settlements also. It will be objected that complete registration would show a graver rate; but even were so large a proportion as (say) quarter of all deaths to go unrecorded, the rate would still be more satisfactory than would be expected in a malarious tropical country.

8. The mean rates for each race are:—Europeans and Eurasians three, Malays 24, Chinese 27, Indians 68, and “other races” 126 deaths per thousand persons living. Inaccuracy of descriptions renders it possible that the first and last of these rates are very erroneous; but the latter section includes large numbers of Javanese, whose employment, generally on earth operations, exposes them greatly to fever, to which they are, I think, unusually susceptible.

9. The rate among Chinese is high, considering that it refers to a population of young male adults, mostly selected (as sinkehs) for their physical fitness.

10. That the rate among Malays should be so low as 24 per mille, nearly one third less than the birth-rate, is very satisfactory. These people obtain, as they seek, practically no medical relief at the hands of the Government, preferring their own—it is needless to say, generally inefficacious—medicaments. To compare them with the Chinese, probably at least half the deaths should be deducted as occurring either in children who are under, and older persons who are over, the average limits of age of the latter race. The death-rate of Malay males taken of the same average age as with the Chinese population, would then be probably about 12 per mille, or less than half that of the Chinese.

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11. Indians (Tamils) exhibit the severest rate of mortality, 68 per thousand. This is due, as I think, to the initial fact of inferior physique; to their custom of stinting themselves in food to save money; and very largely to the fact that they neglect the one provision against incurring malaria, which is constantly used by every other section of the population, viz., the use of the mosquito curtain. Their death-rate from malaria is thrice much higher than that of any other nationality.

12. I believe that regulations might be usefully made by Government to protect the Tamil by attention to these two aims, viz., the provision for them universally by their employers of cooked rations, of course as part pay, and insistence upon the use of mosquito curtains. If somewhat arbitrary, these measures would be those of sound hygiene, justifiable in the interests of all parties concerned.

13. The Tamil, at present forming barely one-fortieth of the population, furnishes thrice that proportion of deaths, and one quarter of all admissions to the hospitals. Though the actual number of Tamils admitted to hospital during the year (1,926) is not in itself large, the sickness-rate which it represents is enormous, being 513 admissions to hospital for every 1,000 Tamils living.

14. Among Chinese, who furnish nearly three-fourths of all the patients in hospital, the admission-rate is 116 per thousand.

15. Among Europeans and Eurasians it is 12.

16. Among Malays one per mille, or practically nil.

Causes of Death.

17. These, as given in the Police Returns, are exhibited in Table E. The conclusions to be drawn from this table are supported by that which shows the chief causes of mortality occurring in the hospitals (*See Resident's report, Appendix G.*)

18. But there may be gathered from this table (and the charts* made from it) some conclusions which would not appear from hospital statistics. Dealing with deaths, as reported to the police, it is seen, then, that out of every thousand, 606 are among Malays, 327 Chinese, 60 Tamils, 5 "other nationalities." And this agrees fairly well with the estimated relative proportions of the population contributed by the same races; except that the Indians, who contribute 60 deaths, form only 23 out of every 1,000 of population.

19. While the death-rate cannot be accurately reckoned, as the exact population is unknown, the results of analysing the

* Not printed.

deaths actually recorded are both reliable and instructive. They may be summarised thus :—

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(a) Deaths occurring are fairly equally reported by all the different races.

(b) The principal ascribed causes of death are fever, next, dysentery and diarrhoea ; these two together account for more than half of the deaths ; beri-beri accounts for one-tenth ; pulmonary, infantile, and other diseases for the remainder.

(c) Among the Chinese, fever account for nearly 373 per thousand of all deaths, among Malays for 267 per thousand, among Indians 448.

(d) Dysentery and diarrhoea account for 234 per thousand deaths among Chinese, 225 among Malays, 330 amongst Indians.

(e) Beri-beri accounts for 62 deaths per 1,000 among Chinese, but for 140 among Malays, and 15 only (2 deaths) among Tamils. This observation will astonish many who are accustomed to see beri-beri only among the Chinese in our hospitals. But the Malay is very susceptible to beri-beri, and although, as he never comes to hospital, his complaints are seldom seen, there is no reason to suppose that the record is in any way unreliable. I have, it is true, included with beri-beri all deaths described as due to dropsy ; but heart disease, Bright's disease, and alcoholism, its other chief causes, are so rare among the Malays as to be negligible factors in this conclusion. Tamils (as I have pointed out before) seem to be practically exempt from beri-beri ; although that they have no real immunity is shown by their being occasionally attacked.

(f) Infantile disorders account for 7 per cent. of deaths among Chinese, 9 per cent. among Malays, and 7 per cent. among Indians. But among 12 deaths registered in the class "other nationalities," ten died during the first year, another in the fifth, and in only one case was the age adult. Of the 11 deaths, 6 were ascribed to bowel complaints, 4 to fevers, and 1 to "convulsions." This class of the population includes Europeans, Eurasians, and Javanese ; but the children dead were all Eurasians. The conclusion is forced on one that there is very lamentable ignorance, if not reprehensible carelessness, in the bringing up of their children by this class. The high mortality among Indians, though not unpreventable, is more intelligible. Indeed, it seems surprising how, under the circumstances in which these coolies are placed, their children should be reared at all.

20. Fevers, which are probably almost wholly malarial, are seen to be the cause of many more deaths among the population than, as might be expected, is the case in hospital.

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The returns show that the case-mortality of malarial fevers in hospital is less than 2 per cent. (17 per thousand), while fever forms more than one quarter of all cases admitted, being an admission-rate for the population, excluding Malays, who, as has been seen, never seek admission to hospital, of 16 per mille. When it is further considered that probably only the graver cases of fever reach hospital, the deaths assigned to it outside represent a large amount of preventable mortality.

21. To the Malays this applies with still greater force, and it is probable that hundreds of deaths occur among them annually which might be prevented were the only treatment—by quinine—made accessible to them. Unfortunately, a proposal I had made to Government last year to secure this aid, by beginning the distribution of quinine in packets containing suitable doses, throughout the country, as practised in India, and for which a small sum of money was granted, fell through.

22. I hope that the present year may see quinine obtainable at cost price at every post, school, and police station; and in the hands of all responsible headmen, for distribution to those requiring it.

23. Beri-beri has caused fewer deaths this year than last. The type seems also less virulent. The mean death-rate for all hospitals (6.06 per cent) was lower than ever before recorded.

24. This holds good also at the Convalescent Hospital, Port Dickson, where most of the cases are treated. But I am not satisfied that this institution fulfils its promise. The case-mortality there, lower in 1897 than the general rate, has in both of the succeeding years been higher, a result which is possibly attributable to local increase of the infective agent in virulence, or in quantity, or both, in spite of there being neither overcrowding as usually understood, nor any deficiency of ventilation.

25. Contrary to popular opinion, beri-beri, as I have pointed out in former reports, is far from being the most formidable of our endemic disorders. The case-mortality in hospitals, where the gravest cases are gathered, has never exceeded 16 per cent., in the Negri Sembilan at least. A dozen among the disorders common in temperate latitudes are far more fatal. Still, it remains, economically, one of the bad features of the State. Hospital admissions on account of it are, for Chinese, 66 per thousand, and it furnishes nearly one-third of all admissions, and the same proportion of the deaths. As the returns show that, among all deaths recorded, 87 per thousand, or less than one-tenth, occur in hospital, it will be seen that the real sickness-rate and mortality from this complaint among the natives must be very great. Probably at least one fifth of all deaths among them are due to this cause; while, of course, it incapacitates from labour, for many months, thousands of individuals who ultimately recover.

26. Small-pox broke out in Rembau at the end of the year, imported thither from Malacca. There occurred 25 cases, with three deaths. For a time there was difficulty in carrying on vaccination, the supply of lymph having run short.

27. Rinderpest has appeared sporadically in different districts for the greater part of the year. It may be said, indeed, to have become endemic, or rather enzootic. This plague, which annually causes enormous loss to the Malays, can, as I have pointed out to Government, be combated by modern means. The methods of inoculation practised in South Africa and in Cambodgia have been so successful that only 5 to 6 per cent. of treated animals succumb upon infection; here a buffalo infected rarely recovers. A grant of \$1,000, provided jointly by this and the Straits' Governments, to be devoted to experiment, was the first fruit of my representations in this matter.

II.—SANITATION.

28. Improvement in the cleanliness of nearly all the villages has been effected by the action of sanitary boards. Several diseases rife in Seremban own no other causes than those due to defective sanitation, and it lies much in the hands of Government to abolish them. Malaria, dysentery, and other bowel complaints, are to be classed among these disorders.

29. Sins, both of omission and of action, are to be charged even to Government in this respect. Not only are the precincts of villages wholly neglected, but when new roads and works are undertaken, borrow-pits for soil are made in the nearest quarter without any regard to drainage, which it is left to chance and the future to supply, so that innumerable small stagnant ponds are everywhere established which form admirable breeding places for malariferous mosquitoes.

30. The filling in of such malodorous pits and puddles, drainage of all marshy plots, and the cleaning up of scrub, in the neighbourhood of all villages, are obvious and elementary measures of sanitation which Government should not neglect.

31. Since recent researches have proved certain of the mosquito tribe to be one and probably the only cause of the infection of human beings with malaria, measures directed to the extermination of this pest ought no longer to be considered as productive merely of vague and ill-defined sanitary and æsthetic results; and can be neglected by no Government which poses as modern and enlightened, or as reasonably careful of the health of the communities entrusted to their charge.

32. Government (like the Assyrian) seems rarely moved to meet the requirements of hygiene when the services required are humble—possessing merely the merit of directly, though

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inconspicuously, benefiting small sections of the public. For instance, pure and even potable water is still to seek in Seremban.

At the head-quarters of Government, there exists no single well which would be passed as potable by a rural council in England. The quarters of Government officers are yet worse off in this matter than the village.

33. I believe that a scheme for a large filtered pipe-supply is in contemplation. But attention ought to be given to present need; and pending the execution of more magnificent schemes now in the clouds, deep wells, properly built, should be freely constructed in the village, and at every officer's quarters. There is no lack of deep water, but Government have grudged the money to make it available.

34. The best of filters will not make dirty water palatable. People have therefore to order aerated water from Singapore merely to get water fit for drinking, so that, in a country running with rivers, the commonest of necessities becomes nearly as dear as once at Johannesburg.

35. I urge upon the Government that there is no better purpose to which to devote a portion of the large unearned increments it is now drawing out of its tin-capital than the improvement of the public health.

The precincts of every village site should be perfectly cleaned and drained for an area of a mile in radius; every house in the village should have access to a free supply of pure potable water. Provision for these measures of general sanitation is a duty, the early and effective execution of which will bring Government greater credit than other less necessary, if more expensive and magnificent, enterprises.

III.—SANATORIA; HYGIENE OF PERSONNEL.

36. The briefest review of the general health ought not to be dismissed without some attention to that of the *personnel*, the more especially as the staff of civil servants is now increased, and sought to be put upon a stable and self-supplying footing, not by the addition of old and travelled and more or less acclimatised officers, as formerly, but by yearly draughts from England of Cadets "caught young and early." What have been the hygienic requirements of the Service in the past, therefore, will apply with increasing force and urgency to the service in the future.

37. No officer of European constitution will stand the brunt of the 30 years' service in the tropics, which is the prospect before its younger members, and preserve unimpaired his working efficiency—or even moderately good health—for that period. Unless there be adopted certain changes which have already been strongly advocated, this is a fatuous expectation.

38. The Medical Congress which met in October last year made certain strenuous and unanimous recommendations to Government : NEGR;
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(a) One of these was that the age at which retirement could take place should be reduced by five years. It was put upon record by the Congress that whatever considerations there might be to the contrary, *they, as medical men, were personally acquainted with no single officer of the service of the age of 50 who could be reported as entirely "fit and well."*

Other recommendations, urgently made, were :—

(b) That the period of work necessary before long leave could be taken should be shortened from six years to four—the vacation being correspondingly reduced.

(c) That *short vacations should be afforded to all officers yearly.*

39. The opinion of the Congress was clear that the effects of prolonged service here were estimated too lightly ; it was held that service in all tropical countries ought to be placed—as regard leave, service and pension, and pay-rates—on one and the same footing.

40. The real factor that makes for deterioration of health in this country is not the incidence of disease, it is purely climate—the prolonged high temperature, unbroken through the year by any real seasonal variations. Under the physical strain which this involves, the most vigorous system soon grows languid, and "run down"; and morale and mental efficiency pursue no less rapid a descent towards decay. Examples illustrating this contention are visible to Government everywhere, no less than to their medical men ; so that the point need not be laboured. The question is, the remedy now, and for the future ?

41. For the future, the recommendations of the Congress (Government's responsible advisers) ought to be accepted. For the present, and as a continuing beneficial influence in the future, I believe that Government might do an immense amount towards preserving the health—and, what is of no small importance, the pockets—of the service, by opening up access to the hills. The marvellous, almost magical, change which we perceive in decayed and dilapidated colleagues after a spell of long leave in Europe, is due, far more than to any other cause, to the change of temperature.

42. On all the hill ranges over 3,000 feet in altitude the reduction in mean temperature is quite sufficient to afford pleasure and physical re-invigoration. Yet, practically, no use is made of the great mountain ridges standing within easy reach of Government offices.

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43. To use these natural sanatoria to the greatest advantage, it is necessary to build upon them, not merely one or two isolated cottages on remote and misty summits: a series of quarters, available to accommodate, if necessary, the whole European staff of Government (which is not great) should be built upon the hills in each State. For roads of access one may suffice; but, on the heights, several miles of evenly graded road should be laid out for walking and riding along the ridges—which would certainly be possible on the masses of Berembun.

44. Men might then spend week-ends and short vacations on the hills; and those who are now obliged to seek recuperation, after sickness in long, uncomfortable and expensive journeys to places such as Japan and Java and Assam, would find healthier and less expensive sanatoria close at home. For often now the officer seeking to restore his health ruins his fortunes.

45. A seaside Sanatorium such as there is at Port Dickson suits some, but not all persons. I have known cases affected there for the worse; moreover, the change to a cooler temperature, the essential, cannot be enjoyed at sea level.

46. To ignore the opportunities which mountain ranges, so easy of access, offer for sanatoria, is to neglect important factors of health. Let the Government but understand and take a broader view of the hygienic requirements of the service, and they will face the difficulty of expense, which, as money spent on keeping up a maximum of effectiveness in health, will be money ultimately saved, through efficiency of administration. The difficulty will then be rather to comprehend why these requirements have been so long neglected.

IV.—HOSPITALS.

47. The State supports five hospitals for the reception of pauper patients, containing 375 beds. Only one of these hospitals,—viz., Seremban—has a qualified medical officer in charge.

48. There is no accommodation for Europeans and Eurasians or any class better than paupers; and—in a country with a million dollars of revenue—there is not a single trained nurse.

49. Medical relief was given to 12,199 persons, or 151 per thousand of population; an increase of 2 per cent. over the preceding year.

In-patients Increased.

50. Of these; In-patients numbered 3,915, or 48 per thousand of population, an increase of 28 per cent. over last year. Out-patients showed a decrease of 12 per cent.

Daily Average Sick.

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51. The daily average number of in-patients was 252·9.

Mean Mortality.

52. The mean mortality for all hospitals was 4·59 per cent., the rate being lowest at Kuala Pilah (3·80 per cent.), highest at the Beri-Beri Hospital (8·47 per cent.).

53. The increase of in-patients was chiefly at Sememban, and is due largely to the advantage taken by the planters of the concession which was, on my proposal, recommended by the Medical Congress, and sanctioned by Government, of treating estate coolies free, the same as Chinese miners.

Cost.

54. The cost of each in-patient to the State was \$98·45, including all charges (exclusive of rent on capital sunk in buildings, &c.).

55. The average daily cost of each patient, taken the same way, is 27 cents per diem.

56. The cost of out-patients is about 11 cents per head; and is more than covered by reimbursements, through charges made to planters near Kuala Pilah and Tampin for visiting the sick on their estates.

Clinical Returns.

57. The clinical work of the hospitals is epitomised in the returns appended; and although they cannot be considered as pathologically accurate, yet the alphabetical list of disorders treated with results, as it is the simplest, so it affords a fairly reliable compendium of the work done.

58. The form of report desired by the Colonial Office has also been filled in, with as much care as its peculiarities will permit. As a Model Medical Report it, of course, speaks for itself.

59. Tables are given to show the case-mortality of the diseases more commonly treated, and in what proportion they occur. As the hospital records probably reflect fairly accurately the general morbid physiography, it may be interesting to detail their principal features here.

Relative Mortality of Different Diseases.

60. In order of relative mortality, then, the first disease is diarrhoea (mortality 20 per cent.), and next dysentery (17 per cent.), and anæmia (7·24 per cent.). The rate for beri-beri is 4·61 per cent., and for fevers under 2 per cent.

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Relative Frequency.

61. In order of frequency of admissions beri-beri heads the list (304 per thousand cases), next malaria (233 per thousand), diarrhœa and dysentery forming only 23 and 48 per thousand of all cases.

62. The graver mortality of diarrhœa is explained by the fact that these are nearly always either chronic cases of wasting among Tamils, or opium wrecks among Chinese.

63. Dysentery, high as is its mortality, shows an extraordinary improvement over former years; the mortality has been: 17·88 per cent. in 1898, 34·4 per cent. in 1897, and 33·3 per cent. in 1896.

It may be that this is due partly to the disease being less severe, partly to relief being earlier sought; but, in greater part still, I believe it due to a method of local medication which I have adopted in preference to older modes of treatment. But this is a matter upon which I hope to report more fully at the next Congress.

Laboratory.

64. Outside the ordinary routine a grant from Government has enabled me to fit up a small laboratory, in which search is being made for the infective agent of beri-beri; and in which I have been able to teach the more intelligent of my dressers the use of the microscope, so especially useful in the diagnosis of malarial fevers.

65. It is well known (paradoxical though it may seem to the public) that some of the very gravest forms of "fever"—*i.e.*, malarial fever—occur without any fever, or even with subnormal temperatures. For the diagnosis of such cases it is essential that recourse be had to the microscope. A good model of this instrument ought therefore to be furnished to every hospital, and dressers should all be trained in the simple methods of using it for the determination of the amount and type of infection in all cases which may be malarial.

W. L. BRADDON,

State Surgeon.

- APPENDIX A. STATISTICS OF POPULATION for 1899.

	Europeans and Eurasians.		Chinese.		Malays.		Indians.	Others.	Total.
Estimated population, 31st December, 1898	521	—	23,278	—	52,440	—	1,446	76	77,781
Recorded births during 1899	10	—	97	—	1,840	—	25	16	1,988
" deaths	—	2	—	691	—	1,280	—	10	2,110
Immigrants	565	—	10,259	—	3,462	—	1,560	—	15,846
Emigrants	—	324	—	6,813	—	3,025	—	—	10,827
Total...	1,096	326	33,634	7,504	57,742	4,305	3,051	92	95,615
Population, 31st December, 1899	770	—	26,130	—	53,437	—	2,259	82	82,678
									—

APPENDIX B. BIRTH, DEATH, and SICKNESS RATES, 1899.

	Europeans and Eurasians.		Chinese.		Malays.		Indians.	Others.	Total.
Mean population, 1899	645	—	24,704	—	52,938	—	1,862	79	80,228
Births per mille (thousand living)	15.50	—	3.93	—	34.75	—	13.42	202.53	24.77
Deaths per mille	3.10	—	27.97	—	24.17	—	68.20	126.58	26.30
Admissions to hospital	12.04	—	116.00	—	1.02	—	513.00	152.00	48.00

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APPENDIX C.

TABLE showing RELATIVE COMPOSITION OF POPULATION AND PROPORTION OF BIRTHS, DEATHS, and HOSPITAL ADMISSIONS according to NATIONALITY per MILLE.

—	Europeans and Eurasians.	Chinese.	Malays.	Indians.	Others.	Total.
Proportion of Population per 1,000	8.03	307.92	659.84	23.20	.98	999.97
" Births	5.03	48.79	925.55	12.56	8.04	999.97
" Deaths	.94	327.47	606.63	60.18	4.73	999.95
" Admissions to hospital per 1,000 for all diseases	2.00	733.00	17.00	245.00	1.00	998.00

APPENDIX D.

SHOWING ANNUAL MORTALITY, per 10,000 PERSONS LIVING, from DIFFERENT DISEASES.

Nationality.	Fever.	Beri-beri and Dropsy.	Bowel complaints.	Lung complaints.	Convulsions and infantile disorders.	Accidents.	Other causes.	All causes.
Chinese	104	17	65	30	19	6	35	279
Malays...	64	34	54	21	22	—	44	238
Indians	305	10	225	21	48	—	69	682
Other races	—	—	—	—	—	—	—	152
All races	82	27	62	23	21	2	42	263

APPENDIX E.

RETURN SHOWING ACTUAL DEATHS RECORDED for the
STATE for the YEAR 1899.

APPENDIX E.

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RETURN SHOWING ACTUAL DEATHS RE-

Mean population 30th June, 1899.				Total deaths from all causes.	Nationalities				Ages		
					Chinese.	Malays.	Indians.	Other races.	Under 1 year.	1 to 5 years.	5 to 10 years.
Europeans and Eu- rasians.	645										
Chinese	24,704										
Malays	52,938										
Indians	1,862										
Others	79										
Total	80,228										
Total deaths from all causes				2,110	691	1,280	127	12	320	192	256
Nationalities—											
Chinese	691	691	—	—	—	96	46	85			
Malays	1,280	—	1,280	—	—	162	118	160			
Indians	127	—	—	127	—	52	27	11			
Others	12	—	—	—	12	10	1	—			
Ages—											
Under 1 year	320	96	162	52	10	320	—	—			
1 to 5 years	192	46	118	27	1	—	192	—			
5 to 10 years	256	85	160	11	—	—	—	256			
10 to 20 years	526	306	198	22	—	—	—	—			
Over 20 years	816	158	642	15	1	—	—	—			
Causes—											
Fever	661	258	342	57	4	17	61	73			
Beri-beri, dropsy, &c. ...	224	43	179	2	—	—	—	—			
Dysentery, diarrhoea & bowel complaints.	498	162	288	42	6	73	50	57			
Cough & lung complaints	192	75	113	4	—	29	26	49			
Convulsions & infantile diseases.	175	48	117	9	1	158	17	—			
Accidents... ..	21	17	4	—	—	—	1	3			
Other causes	339	88	237	13	1	43	37	74			

APPENDIX E.

CORDED for the STATE for the YEAR 1899.

NEGRI
SEMBILAN,
1899.

Ages.		Causes.							Proportion of popula- tion per mille.
10 to 20 years.	Over 20 years.	Fever.	Beri-beri, dropsy, &c.	Dysentery, diarrhoea & bowel complaints.	Cough & lung diseases.	Convulsions & infantile diseases.	Accidents.	Other causes.	
									Europeans & 8.03 Eurasians.
									Chinese ... 307.92
									Malays ... 659.84
									Indians ... 23.20
									Others ... .98
									Total... 999.97
526	816	661	224	498	192	175	21	339	
306	158	258	43	162	75	48	17	88	
198	642	342	179	288	113	117	4	237	
22	15	57	2	42	4	9	—	13	
—	1	4	—	6	—	1	—	1	
—	—	17	—	73	29	158	—	43	
—	—	61	—	50	26	17	1	37	
—	—	73	—	57	49	—	3	74	
526	—	228	87	102	36	—	4	69	
—	816	282	137	216	52	—	13	116	
228	282	—	—	—	—	—	—	—	
87	137	—	224	—	—	—	—	—	
102	216	—	—	498	—	—	—	—	
36	52	—	—	—	192	—	—	—	
—	—	—	—	—	—	175	—	—	
4	13	—	—	—	—	—	21	—	
69	116	—	—	—	—	—	—	339	

APPENDIX E (i).

NEGRI
SEMBILAN,
1899.

ANALYSIS of all DEATHS (2,110) RECORDED in NEGRI
RACE, AGE, and CAUSE of DEATH, of every THOUSAND

Mean population 30th June, 1899.				Total deaths from all causes.	Nationalities.				Ages.		
					Chinese.	Malays.	Indians.	Other races.	Under 1 year.	1 to 5 years.	5 to 10 years.
Europeans & Eu- 645											
rasians.											
Chinese	24,704										
Malays	52,938										
Indians	1,862										
Others	79										
Total	80,228										
Total deaths from all causes				1,000	327	606	60	5	152	91	121
Nationalities—											
Chinese	327	1,000	—	—	—	300	240	332			
Malays	606	—	1,000	—	—	507	615	625			
Indians	60	—	—	1,000	—	107	141	43			
Others	5	—	—	—	1,000	34	5	—			
Ages—											
Under 1 year	152	139	126	410	833	1,000	—	—			
1 to 5 years	91	66	92	212	83	—	1,000	—			
5 to 10 years	121	123	125	86	—	—	—	1,000			
10 to 20 years	250	443	148	173	—	—	—	—			
Over 20 years	387	228	501	118	83	—	—	—			
Causes—											
Fever	313	373	267	448	333	51	317	285			
Beri-beri, dropsy, &c. ...	106	62	140	15	—	—	—	—			
Dysentery, diarrhoea & bowel complaints.	236	234	225	330	500	228	260	223			
Cough & lung complaints	91	109	88	31	—	90	135	191			
Convulsions & infantile diseases.	83	70	91	71	83	493	88	—			
Accidents	10	25	3	—	—	—	5	12			
Other causes	160	127	185	102	83	134	192	289			

APPENDIX E (i).

NEGRI
SEMBILAN,
1899.

SEMBILAN in 1899, showing the composition in regard to DEATHS grouped separately under each of these factors.

Ages.		Causes.							Proportion of population per mille.
10 to 20 years.	Over 20 years.	Fever.	Beri-beri, Dropsy, &c.	Dysentery, diarrhoea & bowel complaints.	Cough & lung diseases.	Convulsions & infantile diseases.	Accidents.	Other causes.	Eurasians & 8·03 Europeans Chinese ... 307·92 Malays ... 659·84 Indians ... 23·20 Others ... ·98 Total ... 999·97
250	387	313	103	236	91	83	10	160	
582	194	390	191	307	390	274	809	259	
376	187	517	799	588	588	670	190	700	
42	183	86	9	84	18	51	—	38	
—	1	6	—	12	—	6	—	3	
—	—	26	—	146	151	902	—	127	
—	—	92	—	110	135	97	48	109	
—	—	110	—	115	155	—	143	218	
1,000	—	345	389	205	181	—	190	203	
—	1,000	427	611	436	270	—	629	312	
433	346	1,000	—	—	—	—	—	—	
165	168	—	1,000	—	—	—	—	—	
190	265	—	—	1,000	—	—	—	—	
68	64	—	—	—	1,000	—	—	—	
—	—	—	—	—	—	1,000	—	—	
8.	16	—	—	—	—	—	1,000	—	
131	142	—	—	—	—	—	—	1,000	

NEGRI
SEMBILAN,
1899.

APPENDIX F.
SHOWING TOTAL NUMBER of CASES of

	Seremban.			Jelebu.		
	Cases.	Deaths.	Death-rate per cent.	Cases.	Deaths.	Death-rate per cent.
1891—						
Cases	258	—	—	259	—	—
Deaths	—	31	—	—	17	—
Death-rate per cent.	—	—	12·01	—	—	6·56
1892—						
Cases	165	—	—	231	—	—
Deaths	—	26	—	—	18	—
Death-rate per cent.	—	—	15·75	—	—	7·79
1893—						
Cases	308	—	—	222	—	—
Deaths	—	17	—	—	27	—
Death-rate per cent.	—	—	5·51	—	—	1·26
1894—						
Cases	277	—	—	276	—	—
Deaths	—	30	—	—	25	—
Death-rate per cent.	—	—	10·83	—	—	9·05
1895—						
Cases	378	—	—	148	—	—
Deaths	—	55	—	—	13	—
Death-rate per cent.	—	—	14·55	—	—	8·77
1896—						
Cases	586	—	—	173	—	—
Deaths	—	78	—	—	9	—
Death-rate per cent.	—	—	13·31	—	—	5·20
1897—						
Cases	326	—	—	151	—	—
Deaths	—	53	—	—	2	—
Death-rate per cent.	—	—	16·25	—	—	1·32
1898—						
Cases	107	—	—	57	—	—
Deaths	—	10	—	—	—	—
Death-rate per cent.	—	—	9·24	—	—	—
1899—						
Cases	156	—	—	98	—	—
Deaths	—	7	—	—	2	—
Death-rate per cent.	—	—	4·48	—	—	2·04
Total	2,561	307	11·98	1,615	113	6·99

APPENDIX F.

NEGRI
SEMBILAN,
1899.

BERI-BERI TREATED for NINE YEARS.

Kuala Pilah.			Tampin.			Port Dickson.			Total.		
Cases.	Deaths.	Death-rate per cent.	Cases.	Deaths.	Death-rate per cent.	Cases.	Deaths.	Death-rate per cent.	Cases.	Deaths.	Death-rate per cent.
—	—	—	—	—	—	—	—	—	517	—	—
—	—	—	—	—	—	—	—	—	—	48	—
—	—	—	—	—	—	—	—	—	—	—	9.28
—	—	—	—	—	—	—	—	—	396	—	—
—	—	—	—	—	—	—	—	—	—	44	—
—	—	—	—	—	—	—	—	—	—	—	11.11
—	—	—	—	—	—	—	—	—	530	—	—
—	—	—	—	—	—	—	—	—	—	44	—
—	—	—	—	—	—	—	—	—	—	—	8.30
—	—	—	—	—	—	—	—	—	553	—	—
—	—	—	—	—	—	—	—	—	—	55	—
—	—	—	—	—	—	—	—	—	—	—	9.94
—	—	—	—	—	—	—	—	—	526	—	—
—	—	—	—	—	—	—	—	—	—	68	—
—	—	—	—	—	—	—	—	—	—	—	12.92
107	—	—	138	—	—	—	—	—	1,004	—	—
—	6	—	—	11	—	—	—	—	—	104	—
—	—	5.60	—	—	7.97	—	—	—	—	—	10.35
52	—	—	138	—	—	483	—	—	1,150	—	—
—	1	—	—	11	—	—	34	—	—	101	—
—	—	1.92	—	—	7.97	—	—	7.03	—	—	8.87
10	—	—	21	—	—	306	—	—	501	—	—
—	—	—	—	3	—	—	28	—	—	41	—
—	—	—	—	—	14.28	—	—	9.15	—	—	8.18
42	—	—	61	—	—	467	—	—	824	—	—
—	1	—	—	3	—	—	37	—	—	50	—
—	—	2.38	—	—	4.91	—	—	7.92	—	—	6.06
211	8	3.78	358	28	7.82	1,256	99	7.88	6,001	535	9.20

APPENDIX G.

NUMBER OF SICK CONVICTS TREATED IN THE PRISON HOSPITAL DURING THE YEARS 1896, 1897, 1898 AND 1899.

Years.		Total treated.	Total deaths.	Percentage of deaths.	Sickness-rate per mille of prisoners.
1896	...	130	—	—	7·6
1897	...	155	2	1·29	6·4
1898	...	65	1	1·53	15·3
1899	...	92	4	4·34	10·3

APPENDIX H.

TABLE SHOWING THE DIFFERENT NATIONALITIES TREATED AS IN-PATIENTS IN THE STATE HOSPITALS DURING THE YEAR 1899.

Hospitals.	Bengalies.	Chinese.	Europeans.	Eurasians.	Javanese.	Koringee.	Malays.	Sikhs.	Singhalese.	Tamils.	Total.	Proportion of each nationality to total cases treated.
Seremban Hospital	2	1,043	1	7	3	1	29	23	3	756	1,868	73·33
Port Dickson "	—	504	—	—	—	—	3	—	—	24	531	1·76
Jelebu "	—	280	—	—	1	—	1	1	—	17	300	23·65
Kuala Pilah "	—	642	—	—	—	—	6	1	—	97	746	1·22
Tampin "	2	402	—	—	—	—	31	3	—	32	470	—
Total	4	2,871	1	7	4	1	70	28	3	926	3,915	99·96

RETURN of the STATISTICS of POPULATION for the YEAR 1899.

	Europeans and Eurasians.	Tamils.	Chinese.	Malays.	Others	Remarks.
Number of inhabitants in 1898	521	1,466	23,278	52,440	76	
" Births during the Year 1899 ...	10	25	97	1,840	16	
" Deaths " " 1899 ...	2	127	691	1,280	10	
" Immigrants " " 1899 ...	565	1,560	10,259	3,462	—	
" Emigrants " " 1899 ...	324	665	6,813	3,025	—	
Number of inhabitants in 1900	770	2,259	26,130	53,437	82	
Increase, 1899	249	793	2,852	997	6	

NIGRI
SEMBILAN,
1899.

METEOROLOGICAL RETURN for the YEAR 1899.

	Temperature.						Rainfall.		Winds.		Remarks
	Solar Maximum.	Minimum on Grass.	Shade Maximum.	Shade Minimum.	Range.	Mean.	Amount in Inches.	Degree of Humidity.	General Direction.	Average Force.	
January	142.4	68.3	85.5	69	16.6	79	32.51	83	E.		
February	151	66	88	65	23	81	11.50	80.6	N.E.		
March	149	64	91	63	29	80	30.26	84	N.E.		
April	150	54	92	55	39	76	30.98	86	S.E.		
May	147	68.1	90	56	37.2	79	44.91	86	N.E.*		
June	148	55	89	45	48	79	13.07	89	N.E.		
July	145	59	91	55	34	77	14.96	90	S.E.		
August	150	68	90	61	50	79	25.71	81	S.E.		
September	149	59	89	58	33	75	28.15	92	S.W.		
October	148	64	91	63	26	76	50.69	91	S.E.		
November	157	64	89	65	21	78	42.44	89	S.E.		
December	147	65	87	62	27	80	54.32	88	S.E.		
	148.6	62.8	89.3	59.7	31.8	78.2	386.50	86.6	S.E.	No Record.	

RETURN of DISEASES and DEATHS in 1899 at FIVE
HOSPITALS in NEGRI SEMBILAN.

NEGRI
SEMBILAN,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES—			
Small-pox	2	—	
Measles	2	—	
Typhus	—	—	
Dengue	—	—	
Influenza	—	—	
Diphtheria	—	—	
Febricula	1	—	
Enteric Fever	—	—	
Cholera	—	—	
Dysentery	183	30	
Yellow Fever... ..	—	—	
Malarial Fever	380	11	
(a.) Intermittent... ..	312	—	
(b.) Remittent	157	4	
(c.) Pernicious R....	—	—	
Erysipelas	3	—	
Pyæmia	2	—	

NEGRI
SEMBILAN,
1899.

Return of Diseases and Deaths—cont.

Diseases.	Yearly Total.		Remarks
	Cases.	Deaths.	
GENERAL DISEASES— <i>cont.</i>			
Septicæmia	—	—	
Tetanus	1	1	
Tubercle	—	—	
Leprosy	20	1	
(<i>a.</i>) Tubercular	—	—	
(<i>b.</i>) Anæsthetic	—	—	
Yaws	—	—	
Syphilis	107	—	
(<i>a.</i>) Primary	10	—	
(<i>b.</i>) Secondary	11	—	
(<i>c.</i>) Inherited	—	—	
Gonorrhœa	10	—	
Hydrophobia	1	1	
Scurvy	—	—	
Alcoholism	1	—	
Delirium Tremens	1	—	
Rheumatism	126	—	
Rheumatic Fever	—	—	
Gout	—	—	
New Growth, non-malignant	—	—	
New Growth, malignant	2	1	
Anæmia	69	5	
Diabetes mellitus	—	—	
Diabetes insipidus	—	—	
Debility	54	1	

Return of Diseases and Deaths—cont.
 NEGRI
 SEMBILAN,
 1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES—			
DISEASES OF THE NERVOUS SYSTEM—			
Sub-section 1—			
Diseases of the Nerves—	1,279	67	
Neuritis	—	—	
Meningitis	1	1	
Myelitis	—	—	
Hydrocephalus	—	—	
Encephalitis	—	—	
Abscess of Brain	—	—	
Congestion of Brain... ..	—	—	
Sub-section 2—			
Functional Nervous Disorders—			
Apoplexy	—	—	
Paralysis	—	—	
Chorea	—	—	
Epilepsy	1	—	
Neuralgia	3	—	
Hysteria	—	—	
Sub-section 3—			
Mental Diseases—			
Idiocy	—	—	
Mania	—	—	
Melancholia	—	—	
Dementia	—	—	
Delusional Insanity	13	1	

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1899.

Return of Diseases and Deaths—cont.

Diseases.	Yearly Total.		Remarks
	Cases.	Deaths.	
LOCAL DISEASES— <i>cont.</i>			
Diseases of the Eye	24	1	
" " Ear	2	—	
" " Nose	1	—	
" " Circulatory System	—	—	
" " Respiratory System	103	19	
" " Digestive System ...	146	20	
" " Lymphatic System	37	2	
" " Urinary System ...	65	4	
" " Generative System	5	—	
Male Organs ...	—	—	
Female " ...	—	—	
" " Organs of Locomotion ...	8	—	
" " Cellular Tissue ...	75	3	
" " Skin... ..	686	10	
Injuries, General	68	5	
" Local	43	3	
Surgical Operations	—	—	
Malformations	—	—	
Poisons	1	—	
Parasites... ..	15	—	
Total	4,031	191	

No. 12.

PAHANG,
1899.

P A H A N G .

MEDICAL REPORT FOR 1899.

1.—ESTIMATED POPULATION FOR THE YEAR 1899 ; BIRTHS,
DEATHS ; BIRTH-RATE PER 1,000 ; DEATH-RATE PER
1,000 ; COMPARISON WITH PREVIOUS YEAR.*Population.*

1. There was no "actual" increase in the population during 1899, nor was there any "natural increment of the people," the excess of deaths over births having been 239. No record of emigration was kept, and only 753 immigrants were recorded. An increase of the European community is shown in the return.

Births.

2. The births numbered 1,240, with a birth-rate of 16·9 per 1,000 of the population, compared with 87 and a birth-rate of 1·1 per mille in 1898. Not one single birth among Europeans and three among Eurasians.

Deaths.

3. (a) The deaths totalled 1,479, with a general death-rate of 20·2 per 1,000, against 812 and a mortality of 10·8 per mille the year previous.

(b) The most important causes of death among the population were :—

	Deaths.			
Fever	600
Beri-beri	146
Dysentery	78
Diarrhœa	48
Respiratory diseases	99

PAHANG,
1899.

The mortality accompanying child-birth was high—11 in 100.

(c) The rate of infant mortality was 161·2 per 1,000 births.

(d) The distribution of deaths in the four districts of the State was as follows :—

	Deaths.
Ulu Pahang	518
Temerloh and Bentong ...	463
Pekan and Rompin	269
Kuantan	229

Of the 518 Ulu Pahang deaths, 71 belonged to the Raub sub-district. The mortality was highest in the Ulu Pahang district and lowest in the Kuantan.

II.—PEVALENCE OF SICKNESS IN THE DIFFERENT SEASONS OF THE YEAR, AND GENERAL CHARACTER AS TO THE MILDNESS OR SEVERITY OF THE DISEASES PREVAILING.

1. The greatest amount of sickness was recorded during the drier south-west monsoon season from April to September—3,372 cases against 2,841.

2. The prevailing diseases were malarial fevers, beri-beri, and dysentery. Malarial fevers were more prevalent during the south-west monsoon—857 cases compared with 734. Dysentery also prevailed to a greater extent during the drier season—107 versus 97 cases. Beri-beri was equally common in the two seasons—148 against 148 cases.

3. Malarial fevers were more severe during the south-west, and beri-beri worse during the north-east, monsoon.

III.—RELATIVE MORTALITY IN THE DIFFERENT SEASONS.

1. The largest amount of mortality was recorded during the more rainy north-east monsoon from October to March, 806 against 673 deaths being shown in the returns of the Registrar of Births and Deaths.

2. Beri-beri was somewhat more deadly during the north-east monsoon ; while the mortality from malarial fevers and dysentery were about the same in the two seasons, neither of these diseases have been specially fatal in a particular season.

3. The remarks as to the relative prevalence and relative mortality of the prevailing diseases are based on the records of the hospitals and dispensaries, from which the nosological return has been made

IV.—METEROLOGICAL CONDITIONS OF THE SEASONS, AND
THEIR PROBABLE EFFECT WITH REGARD TO SICKNESS—
OTHER CAUSES OR CONDITIONS AFFECTING THE PUBLIC
HEALTH.

PAHANG
1899.

Temperatures of the Seasons.

1. There was very little difference between the temperatures of the north-east and south-west monsoon seasons. The mean temperature in the south-west monsoon was slightly higher than in the north-east, being 82·3 against 81·0; the temperature range was a trifle greater in the south-west monsoon, being 23·1 against 22·3.

Rainfalls of the Seasons.

2. A considerable difference existed between the rainfalls of the two seasons—64·17 inches in the north-east monsoon, compared with 44·78 inches in the south-west.

Influence of Temperature on Sickness.

3. As the temperature of the two different seasons and of the various months was pretty uniform, the influence of this meteorological condition on sickness in general and on the prevailing diseases in particular cannot be determined.

Influence of Rainfall on Sickness.

4. (a) A greater amount of sickness was recorded during the three driest months of the year (February, July, September), 1,675 cases, against 1,471 cases for the three most rainy months (October, November, December).

(b) Malarial fevers were more prevalent during the three driest months—423 against 345 cases. Beri-beri was more frequent during the three driest months—75 against 65 cases. Dysentery was equally common during the three driest and three most rainy months—59 against 58 cases.

Other Conditions affecting the Health of the Population.

5. (a) The injurious effects of long-continued residence in a warm and malarial country like Pahang on the European need not be here stated, but might be borne in mind so as to emphasise the necessity for a change of climate at the end of every three years, to prevent deterioration of health, and to preserve tone and vigour of mind and body. Europeans should have this necessary change before marked or serious damage to health occurs.

(b) Disturbance of the soil connected with tillage, the construction of roads, the erection of buildings, &c., accounted for a good deal of sickness. The sickness and mortality among the Chinese

PAHANG,
1899.

coolies at Bentong, Liang and Lepar, were, in a great measure, due to this cause. The evils of soil-upturning are temporary and will subside after a few years.

(c) Improper food, arising from high prices and from the difficulties and cost of transport, played a part in the production of disease, particularly among settlers in newly-opened and remote places—*e.g.*, Bentong, Liang and Lepar. Salt food constitutes too large a part of their dietary. Lowly-nitrogenous food and a diet deficient in fat, fresh flesh, fresh vegetables and fruits are powerful predisposing causes of beri-beri among Chinese settlers. Scorbutic dysentery occurred at Lepar.

(d) Opium caused a certain amount of sickness among Chinese.

(e) A large proportion of the native alien population (Chinese coolies, Sikhs, Pathans) are in the habit of taking their cold bath in the very early morning, when vitality is at its lowest and the constitution consequently least able to withstand injurious influences. Aliens in a malarial country should bathe when the air and water are fairly warm, and so avoid exposure to the cold, damp, malarial night and early morning air.

(f) It is doubtful whether workers in alluvial tin suffer from any particular disease which can be definitely traced to the action of tin *per se*.

(g) The immigration of aliens—Chinese sinkchs in particular and paupers in general—contributed to the sickness and mortality of the State.

V.—REMARKS ON PARTICULAR DISEASE THAT HAVE RECURRED DURING THE YEAR.

1. Beri-beri was most rife and deadly at Bentong, where there was much soil disturbance. For the same reason it appeared at the Lepar mines and at the Pekan jail, where the digging of a well in co-operation with the December rains led to an acute outbreak of beri-beri, not a single case of which had occurred in the jail for two years previously. There was no change of the conditions of life in the Pekan jail to otherwise account for the outbreak. Beri-beri is thus a soil disease, and in this respect and in its relationship to heat and damp it resembles malaria. Improvement, therefore, of the soil and removal of dampness would simultaneously lessen the amount of sickness and mortality from both beri-beri and malaria. The unhealthiness of a tropical country is proportional to the extent of undrained and uncultivated soil which it contains. Hence the value of deep drainage, cultivation and measures to prevent saturation and contamination of the soil with surface water. Beri-beri is, however, distinct

from malaria in other respects—*e.g.*, it does not exhibit that benign amenability to quinine which is so characteristic of malarial affections. The nosological return of the various medical institutions showed a slight decrease of beri-beri in 1899, 296 cases against 342 the year previous. Of the total 296 cases, 141 were in-patients with 14 deaths and a case mortality of 9.9 per cent., against 201 in-patients with 15 deaths and a mortality of 7.4 per cent. in 1898. Much attention was given to the dieting of beri-beri. There is no drug which exerts a specific influence on beri-beri as on malaria. Digitalis was of great value. I have not prescribed strychnine since April of 1897, giving a combination of iron and quinine instead, which seem to be the two best tonics for beri-beri. Quinine is administered in tonic and not in anti-malarial doses. Since the disuse of strychnine, I have experienced a remarkable decline in the beri-beri mortality, the percentage of deaths falling from 30.35 to 5.10 per cent. Coincident with the change of physic much more careful attention was given to diet, and hence the lowered mortality was not wholly due to change of medicine. It is difficult to estimate the relative value of change in dieting and in drugging, as the two changes were made at the same time. Perchloride of mercury was not tried. Massage was of great service.

2. There was a trifling increase of malarial fevers in 1899, 1,591 cases against 1,561 the year previous. Of the total 1,591 cases, 312 were in-patients, with 12 deaths and a case mortality of 3.8 per cent., against 343 in-patients, with 11 deaths and a mortality of 3.2 per cent. in 1898.

3. A trivial increase of dysentery was also recorded in 1899—204 cases against 195 the year before. Of the total 204 cases, 83 were in-patients, with 17 deaths and a mortality of 8.3 per cent., against 100 in-patients, with 23 deaths and a mortality of 23 per cent. in 1898. Both malarial fevers and dysentery were least common at Pekan.

4. There was no evidence of any considerable spread of venereal diseases in 1899—193 cases against 157 the previous year. Of the total 193 cases, 31 were in-patients, with two deaths and a case mortality of 6.4 per cent., against 33 in-patients, with one death and a mortality of 3.0 per cent. in 1898. Primary syphilis was rare—only six cases; Gonorrhœa and tertiary syphilis were the commonest forms—94 and 75 cases each against 76 and 46 cases in 1898. Compulsory measures are hardly necessary at present to protect the population from venereal diseases.

5. Small-pox was epidemic in 1899, notably in the Temerloh and Pekan districts. Pahang had been free from small-pox in an epidemic form for about 13 years previously. The disease

PAHANG, 1899. was imported and was distributed as follows in the four districts of the State :—

—			Cases.	Deaths.
Ulu Pahang	...		3	2
Pekan	...	...	52	18
Temerloh	...	...	87	26
Kuantan	...	...	—	—

Though the Kuantan community was least protected by vaccination and was most exposed to the invasion of small-pox from the East Coast Malay States, where the disease is always present, yet it was free from it. This immunity was probably both natural and acquired. The 1899 small-pox epidemic was limited to 142 cases, with 46 deaths and a case mortality of 32·3 per cent.

6. There was no recurrence of cholera, which cleared out a very large proportion of the Lower Pahang population in 1896. In fact, this widespread epidemic was not confined to Lower Pahang, it extended 200 miles up the Pahang river as far as Kuala Lipis and Panggong, where the conditions are not so favourable to its spread. The conditions under which the cholera germ generates are probably always present at Pekan, and the probable reasons why we do not get an annually recurring outbreak of cholera are, firstly, because a previous cholera epidemic—*e.g.*, the 1896 epidemic—practically makes a clean sweep of the susceptible portion of the community and only permits those who are resistant to the disease to survive—*viz.*, the non-susceptible and fittest; secondly, because the conditions under which the cholera germ generates are not in sufficient amount each year to give rise to an annual outbreak of cholera, some years being needed to allow these factors of the disease to accumulate to the necessary amount. These two reasons might possibly explain the recurrence of beri-beri at the Pekan jail, where the actiological conditions of the disease are probably always present, though not always in sufficient abundance to cause an outbreak of the disease and not always attacking a susceptible jail population. Disease would practically be a thing of the past in a community enjoying excellent health—a non-susceptible community.

7. Leprosy, so far as my personal observations go, is rare in Pahang. I have only seen five cases in the State during six years. According to the official enumeration of 1899 there were in Pahang 168 lepers in a population of 73,000, giving the high

proportion of about 21 lepers in 10,000 persons. Two of these lepers were Chinese, the rest were Malays. There were 77 lepers in the Ulu Pahang district, but not a single one in the Kuantan. Leprosy is said to be on the spread in the Pekan district, but not in the Ulu Pahang and Termerloh districts. Measures should be taken to prevent the spread of this sad, disfiguring, mutilating disease. The danger to the community from lepers being at large and allowed to keep shops, to handle food, clothing, &c., to hire themselves out as servants or prostitutes, is a real and great one. The high proportion of lepers in this State and the report that leprosy is on the increase in the Pekan district—probably the most thickly populated so far as Malays are concerned--make the question of protecting the population from this dire disease all the more worthy of consideration.

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VI.—GENERAL SANITARY CONDITION OF THE STATE— SANITARY STATE OF THE CHIEF TOWNS WITH REFERENCE TO DRAINAGE, WATER SUPPLY, OVER- CROWDING.

1. The sanitary state of the chief towns was as fair as could be expected in the circumstances. The State is still in its infancy, and hence its sanitation should not be subjected to strict scrutiny. Good sanitary work has already been done; no less than four Sanitary Boards have been established in the State, and they have enquired into and dealt with the usual sanitary questions of the day. By-laws were passed by the Sanitary Boards of the State and are in force. Further necessary sanitary improvements are simply a question of outlay, and will be accordingly effected.

2. The water supply of Kuala Lipis is good, being derived from the Lipis and Jelai rivers, which are swift and are not appreciably polluted by the few scattered villages up river. The removal and disposal of night-soil and solid refuse were satisfactory. There is a good fall to facilitate natural drainage.

3. The water supply of Pekan is not good. It is chiefly derived from the Pahang river, which is not swift at Pekan and which is liable to considerable contamination from numerous, rather thickly populated, villages up river. The removal and disposal of night-soil and solid refuse were satisfactory. The drainage of Pekan is most unsatisfactory. There is practically no fall, the town being almost on river level. Infectious diseases, especially cholera, might at any time spring into existence at Pekan, which stands on flat, low-lying, clay soil, in the vicinity of swamps and unhealthy vegetation, and on the bank of a river which is usually flooded in the rainy season. Pekan thus abounds in the conditions which cause dampness of soil and its saturation and contamination with sewage and other organic matter. A damp soil so offensively contaminated is probably the breeding ground of the cholera and small-pox

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germs. The medical history of Pekan rather points in the direction of unhealthiness, notably the previous health history of the Pekan jail, the cholera scourge of 1896, and the large number of out-patients in proportion to the population of the town. A cool and refreshing sea-breeze, however, constantly blows at Pekan, which to some extent compensates for its faulty situation.

4. Rain and well water were the sources of water supply at Raub, but chiefly well water, which is not satisfactory. The laying on of a public water supply from hill springs has been under consideration. The drainage was not very satisfactory. Night-soil and solid refuse disposal were satisfactory.

5. There is no overcrowding in the State. Cleanliness of person and clothing is a matter of care and attention among natives, which no doubt has something to do with the good general health of the population.

VII.—THE VACCINATIONS PERFORMED DURING THE YEAR AND THE CONDITIONS OF THE POPULATION IN RESPECT OF PROTECTION FROM SMALL-POX.

There were 7,619 vaccinations done during the year, with a success-rate of 96·7 per cent, against 1,364 in 1898. A considerable portion of the population are protected against small-pox.

VIII.—OTHER OBSERVATIONS REGARDING THE HEALTH OF THE POPULATION.

1. The slight increase in the amount of sickness recorded during the year, as compared with 1898, is hardly worth consideration—6213 cases against 5,741 the year previous. This gives a recorded sick-rate of 85·1 per 1,000 of the population.

2. The average daily sick-rate among the in-patients at the hospitals was 56·6 and the death-rate among the in-patients was 5·8 per cent. against 7·5 in 1898.

3. The health of the population in general was good, the general death-rate was low—20·2 per mille. There was no widespread epidemic, the small-pox epidemic being limited to only 142 persons.

4. The principal diseases recorded at Kuala Lipis among Europeans were—

Malarial fevers	...	...	...	...	26
Diarrhoea	...	...	...	...	5
Congestion of liver	...	...	...	...	3
Skin diseases	...	...	...	...	14
Dysentery	...	...	...	...	1

D. H. McClosky,

Acting Residency Surgeon

Kuala Lipis,
24th July 1900.

RETURN of the STATISTICS of POPULATION for the YEAR 1899.

—	Europeans and Whites.	Africans and Eurasians.	East Indians.	Chinese 331 and Malays 1,109.	Others : Mixed and Coloured.	Total.	Remarks.
Number of inhabitants in 1899 ...	76	N.R.	N.R.	62,924	10,000	73,000	
" Births during the year 1899...	—	N.R.	8	1,229	3	1,240	
" Deaths " " "	—	3	27	1,440	9	1,479	
" Immigrants " " "	N.R.	N.R.	N.R.	N.R.	—	753	
" Emigrants " " "	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	
Number of inhabitants in 1898 ...	60	—	—	65,000	10,000	7,500	
Increase or ... " " "	16	—	—	—	—	—	
Decrease ... " " "	—	—	—	2,076	—	2,000	

PAHANG,
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P. S. S.

METEOROLOGICAL RETURN for the YEAR 1899.

	Solar Maximum.	Minimum on Grass.	Temperature.				Rainfall.		Winds.		Remarks.
			Shade Maximum.	Shade Minimum.	Range.	Mean.	Amount in Inches.	Degree of Humidity.	General Direction.	Average Force.	
January	89.5	70.0	19.5	79.7	8.07				
February	91.5	68.5	23.0	80.0	7.82				
March	92.0	70.0	22.0	81.0	8.22				
April	95.0	71.0	24.0	83.0	7.97				
May	94.5	72.0	22.5	83.2	10.74				
June	92.0	70.5	21.5	81.2	8.02				
July	94.0	70.0	24.0	82.0	2.76				
August	94.5	70.0	24.5	82.2	9.52				
September	94.0	70.5	22.5	82.2	5.77				
October	94.0	71.5	22.5	82.7	14.03				
November	93.5	69.5	24.0	81.5	12.59				
December	93.0	70.0	23.0	81.5	13.44				
			93.1	70.2	22.7	81.6	108.95				

RETURN of DISEASES and DEATHS in 1899 at the following INSTITUTIONS:—GENERAL HOSPITAL, KUALA LIPIS; GAOL HOSPITAL, KUALA LIPIS; GENERAL HOSPITAL, PEKAN; GENERAL HOSPITAL, RAUB. PAHANG, 1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES—			
Small-pox	1	—	
Measles	1	—	
Typhus	—	—	
Dengue	—	—	
Influenza	6	—	
Diphtheria	—	—	
Anasarca	12	1	
	2	—	
Enteric Fever	—	—	
Cholera	—	—	
Dysentery	83	17	
	121	—	
Yellow Fever... ..	—	—	
Malarial Fever	3	—	
	3	—	
(a.) Intermittent	280	3	
	1,269	—	
(b.) Remittent	29	9	
	7	—	
(c.) Pernicious R.... ..	—	—	

Note.—This return includes both in-patients and out-patients. The numbers of out-patients are in thick figures.

*Return of Diseases and Deaths—cont.*PAHANG,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES— <i>cont</i>			
Erysipelas	2	—	
Pyæmia	—	—	
Septicæmia	—	—	
Tetanus	—	—	
Tubercle	2	—	
Leprosy—			
(a.) Tubercular	—	—	
(b.) Anæsthetic	—	—	
Yaws	—	—	
Malarial Cachexia	2	—	
Syphilis—			
(a.) Primary	1	—	
	5	—	
(b.) Secondary	17	2	
	58	—	
(c.) Inherited	2	—	
	10	—	
Gonorrhœa... ..	11	—	
	83	—	
Hydrophobia... ..	—	—	
Soft Chancre	6	—	
Scurvy... ..	—	—	
Alcoholism	1	—	
Delirium Tremens	—	—	

Note.—This return includes both in-patients and out patients. The numbers of out-patients are in thick figures.

Return of Diseases and Deaths—cont.

PAUANG,
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Diseases.	Yearly Total.		Remarks
	Cases.	Deaths.	
GENERAL DISEASES— <i>cont</i>			
Rheumatism {	27	—	
	298	—	
Rheumatic Fever {	3	—	
	2	—	
Gout	1	—	
New Growth, non-malignant ...	4	—	
New Growth, malignant	1	1	
Anæmia {	19	2	
	47	—	
Diabetes mellitus	1	—	
Diabetes insipidus	—	—	
Debility {	9	—	
	51	—	
LOCAL DISEASES—			
DISEASES OF THE NERVOUS SYSTEM—			
Sub-section 1—			
Diseases of the Nerves—			
Beri-Beri {	14	14	
	155	—	
Meningitis	—	—	
Myelitis	—	—	
Hydrocephalus	—	—	
Encephalitis	—	—	
Abscess of Brain	—	—	
Congestion of Brain... ..	—	—	

Note.—This return includes both in-patients and out-patients. The numbers of out-patients are in thick figures.

PAHANG,
1899.*Return of Diseases and Deaths—cont.*

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES— <i>cont.</i>			
Diseases of the Nervous System— <i>cont.</i>			
Sub-section 2—			
Functional Nervous Disorders—			
Apoplexy	—	—	
Paralysis	1	—	
	2	—	
Chorea... ..	—	—	
Epilepsy	1	—	
	3	—	
Neuralgia	43	—	
Hysteria	1	—	
Sub-section 3—			
Mental Diseases—			
Idiocy	—	—	
Mania	3	—	
	3	—	
Melancholia	—	—	
Dementia	3	—	
Delusional Insanity	1	—	
Diseases of the Eye	6	—	
	104	—	
„ „ Ear	1	—	
	49	—	
„ „ Nose	5	—	

Note.—This return includes both in-patients and out-patients, The numbers of out-patients are in thick figures.

*Return of Diseases and Deaths—cont.*PAHANG,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES— <i>cont.</i>			
Diseases of the Circulatory System {	2	—	
	12	—	
" " Respiratory System {	40	4	
	286	—	
" " Digestive System... {	98	7	
	761	—	
" " Lymphatic System {	6	1	
	10	—	
" " Urinary System ...	7	—	
" " Generative System...	4	—	
Male Organs ... {	10	—	
	26	—	
Female " ... {	1	—	
	20	—	
" " Spleen {	12	—	
	52	—	
" " Organs of Locomotion. {	4	—	
	16	—	
" " Cellular Tissue ... {	93	—	
	599	—	
" " Skin {	20	—	
	448	—	
Injuries, General {	14	1	
	21	—	

Note.—This return includes both in-patients and out-patients The numbers of out-patients are in *tick figures.

PAHANG,
1899*Return of Diseases and Deaths—cont.*

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
Injuries Local {	56 504	1 —	
Surgical Operations	1	—	
Malformations	—	—	
Poisons {	2 24	— —	
Parasites	12	—	
Hernia {	1 2	— —	
Caries of Tooth {	— 27	— —	
Other Diseases !... ..	20	—	
Total... .. {	1,021 5,192	63 —	

Note.—This return includes both in-patients and out-patients. The numbers of out-patients are in thick figures.

Kuala Lipis,
24th July 1900.

D. H. McCLOSKEY,
Acting Residency Surgeon.

No. 13.

PERAK
1899.

P E R A K .

MEDICAL REPORT FOR 1899.

DISTRICT HOSPITALS, IN-DOOR DEPARTMENT.

RETURNS.

At the commencement of the year 1899, there remained in the eleven District Hospitals 1,253 in-door patients. During the year under notice 19,693 cases were admitted, that is 956 less than in 1898. The total treated amounted to 20,946; a decrease of 1,021 on the figures for 1898.

Out of the total treated, 16,596 (79·23 per cent.) were discharged; 475 were transferred; 312 (28 less than in 1898) absconded from hospital; 2,202 died; that is, a decrease of 124 deaths compared with the previous year; and on the 31st December, 1899, there were, remaining in the District Hospitals of the State, 1,361 patients.

ADMISSIONS.

There was a decrease in admissions at the Districts Hospitals, at Taiping (936), Batu Gajah (141), Gopeng (106), Ipoh (167), Kampar (374), and Parit Buntar (2). Admissions increased at Kuala Kangsar (22), Teluk Anson (160), Tapah (129), Bagan Serai (453), and Selama (6). Excepting at Selama, the larger admissions would be accounted for mostly by the Railway construction works, and at Bagan Serai, in addition, by coolies from Irrigation works and new Estates.

DEATHS.

This portion of the Returns would be better understood by reference to the following tables:—

PERAK
1899.

Total Deaths:—

Hospital.				1898.	1899.	Increase. 1899.	Decrease. 1899.
Taiping ...	...	...	M	489	488	—	1
Kuala Kangsar...	...	...	A	125	110	—	15
Batu Gajah ...	...	...	M	394	370	—	24
Gopeng ...	...	...	M	278	241	—	37
Ipoh ...	...	...	M	607	503	—	104
Kampar...	...	...	M	91	79	—	12
Teluk Anson ...	...	...	A	50	48	—	2
Tapah ...	...	...	M	136	195	59	—
Parit Buntar ...	...	...	A	69	64	—	5
Bagan Serai ...	...	...	A	83	103	20	—
Selama ...	...	...	A	4	1	—	3
Total ...				2,326	2,202	—	124

Deaths occurring within 48 hours of admission :—

Hospital.				1898.	1899.	Increase. 1899.	Decrease. 1899.
Taiping ...	...	...	M	147	131	—	16
Kuala Kangsar...	...	...	A	38	40	2	—
Batu Gajah ...	...	...	M	75	72	—	3
Gopeng ...	...	...	M	62	47	—	15
Ipoh ...	...	...	M	170	136	—	34
Kampar...	...	...	M	57	52	—	5
Teluk Anson ...	...	...	A	16	11	—	5
Tapah ...	...	...	M	45	42	—	3
Parit Buntar ...	...	...	A	12	17	5	—
Bagan Serai ...	...	...	A	16	19	3	—
Selama ...	...	...	A	—	—	—	—
Total ...				638	567	—	71

Percentage of deaths, inclusive of all cases :—

PERAK,
1899.

Hospital.				1898.	1899.	Increase. 1899.	Decrease. 1899.
Taiping ...	...	...	M	11.28	14.26	2.98	—
Kuala Kangsar...	...	...	A	8.60	7.49	—	1.11
Batu Gajah ...	...	...	M	10.84	10.66	—	.18
Gopeng ...	...	...	M	13.11	12.11	—	1.00
Ipoh ...	...	...	M	16.22	14.27	—	1.95
Kampar...	...	...	M	6.69	8.06	1.37	—
Teluk Anson ...	...	...	A	6.62	5.20	—	1.42
Tapah ...	...	...	M	8.01	10.47	2.46	—
Parit Buntar ...	...	...	A	6.13	5.75	—	.38
Bagan Serai ...	...	...	A	4.80	4.78	—	.02
Selama ...	...	...	A	8.88	2.12	—	6.76
Total ...				10.57	10.51	—	.06

Percentage of deaths, excluding those occurring within 48 hours of admission :—

Hospital.				1898.	1899.	Increase. 1899.	Decrease. 1899.
Taiping ...	...	...	M	8.17	10.85	2.68	—
Kuala Kangsar...	...	...	A	6.14	4.90	—	1.24
Batu Gajah ...	...	...	M	8.96	8.77	—	.19
Gopeng ...	...	...	M	10.50	9.98	—	.52
Ipoh ...	...	...	M	12.23	10.83	—	1.40
Kampar...	...	...	M	2.60	2.91	.31	—
Teluk Anson ...	...	...	A	4.60	4.05	—	.55
Tapah ...	...	...	M	5.50	8.40	2.90	—
Parit Buntar ...	...	...	A	5.07	4.22	—	.85
Bagan Serai ...	...	...	A	3.93	3.93	—	—
Selama ...	...	...	A	8.88	2.12	—	6.76
Total ...				7.90	8.02	.12	—

PERAK,
1899.

The fatal cases have been classed in these tables into two sets:—(a) inclusive of all deaths, (b) exclusive of deaths occurring within 48 hours of patients reaching the hospitals. The latter amount to as many as 567, out of the grand total of 2,202, i.e., 25·74 per cent. The percentage of deaths, inclusive of all cases, was 10·51, against 10·57 in 1898. Excluding deaths within 48 hours, then the rate of mortality of those who had a chance of coming under medical treatment falls to 8·02 per cent. Again, if these tables are looked into, it will be noticed that the greatest number of deaths and the highest rates of mortality have been in the sections where mining is the chief occupation, and is a contrast with the agricultural divisions, where a lower death rate prevails. Alluvial tin mining is not a healthy occupation. In the tables, the mining and agricultural divisions have been distinguished with the letters *M* and *A*, respectively. All points taken into account, the rate of mortality at the District Hospitals is satisfactory. Compared with 1898, there was a rise at three hospitals—Larut by 2·98 per cent., accounted for no doubt by the large decrease of 936 in admissions; Kampar by 1·37 per cent., a similar explanation will hold good here; Tapah by 2·46 per cent., where the large number of coolies exposed to bad influences when employed on Railway construction contributed to an increase both under heads “admissions” and “deaths.”

DAILY AVERAGE OF SICK.

The figures at the various hospitals are detailed in subjoined table:—

Hospital.	1898.	1899.	Increase. 1899.	Decrease. 1899.
Taiping	237·97	225·86	—	12·11
Kuala Kangsar ...	54·49	55·15	·66	—
Batu Gajah	242·10	219·87	—	22·23
Gopeng	148·65	131·25	—	17·40
Ipoh	288·07	225·38	—	62·69
Kampar	19·79	14·51	—	5·28
Teluk Anson	40·47	47·79	7·32	—
Tapah	82·20	88·63	6·43	—
Parit Buntar	69·69	67·42	—	2·27
Bagan Serai	95·24	98·88	3·64	—
Selama	2·18	1·65	—	·53
Total	1,280·85	1,176·39	—	104·46

Return of nationality of patients admitted during 1899 into the 11 District Hospitals:—

PERAK,
1899.

Hospital.	Europeans.	Eurasians.	Chinese.	Malays.	Tamils.	Other Asiatics.	Total.
Taiping ...	55	38	2,243	49	881	154	3,420
Kuala Kangsar	1	—	687	97	575	108	1,468
Batu Gajah ...	5	5	2,484	73	654	247	3,468
Gopeng ...	—	—	1,615	40	252	82	1,989
Ipoh ...	1	—	3,056	38	325	103	3,523
Kampar ...	—	—	879	3	82	15	979
Teluk Anson ...	4	2	282	75	451	109	923
Tapah ...	3	1	1,042	50	700	66	1,862
Parit Buntar ...	—	—	651	27	374	61	1,113
Bagan Serai ...	—	—	1,204	9	932	9	2,154
Selama... ..	—	—	23	1	23	—	47
Total ...	69	46	14,166	462	5,249	954	20,946

The Chinese, who undertake the bulk of the mining work of the State, gave the largest share of in-door patients. The Tamils and other Asiatics come next. Malays, the natives of the State, come third with 462. On account of incomplete former records, no comparison could be made with previous years. The question of attracting Malays, when sick, to a greater extent to our State hospitals has often been discussed. Most of the Malays live at points far removed from the already established hospitals and this is a possible cause of a larger number not seeking admission. A suggestion has been made to construct a hospital at some selected point where the Malay population is most dense, and keep it exclusively for their own use. Further, that the Medical subordinate staff and servants be all Malays. It is questionable whether any expenditure on hospital extension in this direction would be productive of much good. As Muhammadans are naturally conservative in their ways, the time has hardly come for the Malays to make a great departure in their ways and leave their homes and women folk when sick, and rejecting their own medicine men go into hospital and accept European methods of

PERAK,
1899.

management and medicines. It is quite different with the other Asiatic aliens who are here far away from their own homes and relations, and when sick are glad enough to enter the State hospitals for treatment, and at a later stage, when hopes of recovery are abandoned, as a convenience of finding a place of comfort to die in and from where they get a decent funeral. At the present stage of the advancement of these States, the best way of providing medical aid to Malays is through the Out-door Departments, either from the fixed out-door dispensaries attached to the hospitals, or the travelling dispensaries. Those who would entirely refuse in-door European treatment, readily accept medicines which they could take to their own homes.

STATISTICS OF POPULATION.

BIRTHS AND DEATHS.

Subject to what was written in my previous year's report as to the uncertainty of the statistics, I give the following particulars:—The estimated population for 1899 is 294,297, compared with 272,506 in 1898—an increase of 21,791. This is accounted for chiefly by the large influx of Chinese coolies to meet the demand for labour in the tin mines.

Births registered amount to 4,886—an increase of 306 on the figures for the previous twelve months. The birth-rate is 16·63 per thousand, in comparison with 16·81 in 1898. The number of births has improved slightly under each of the heads of registration as detailed below:

Year.				Europeans and Eurasians.	Chinese.	Malays.	Indians.	Others.
1899	...	...	...	34	576	3,860	371	45
1898	...	...	...	26	502	3,673	343	39
1899 (increase)	...	...	...	8	74	187	28	6

Deaths.—Recorded as 8,756—658 more than in 1898. The rate of mortality, per thousand, is 29·41 and 30·08 for the two years. respectively. This is not unfavourable when compared with the Straits Settlements; for the whole Colony in the year 1898, the death rate was 36·70 per thousand. Particulars regarding

nationality under which the deaths were registered are given in subjoined table:—

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Year.				Europeans and Eurasians.	Chinese.	Malay.	Indians.	Others.
1899	10	5,213	2,580	871	82
1898	...	...	...	9	4,905	2,567	647	70
1899 (increase)...	...	...	...	1	308	13	224	12

Comparative table of rates of mortality for 1899 and 1898, per thousand:—

Year.				Europeans and Eurasians.	Chinese.	Malays.	Indians.	Others.
1899	...	...	...	6.65	33.09	23.61	52.50	8.69
1898	...	...	...	6.98	35.00	23.88	45.68	7.39
1899	{ Increase...	...	...	.33	1.91	.27	—	—
	{ Decrease	...	...	—	—	—	6.82	1.30

The highest death-rate has occurred during the last two years amongst Indians. For railway and road construction and irrigation works, a considerable number of Indian Immigrants have and are being introduced into the State, and there is a probability that the death-rate amongst Tamils will rise. As a class they have proved to be unsuited to be employed on new works where they have to be located on land recently denuded of virgin forest, and where fresh soil is being turned up. Chinese know better how to protect themselves when living under such unfavourable conditions, and generally are less prone to disease. It is advisable to consider, even at this stage, whether Government should not by preference engage more Chinese labour. In the long run it would be less expensive.

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REMARKS ON SICKNESS AT DIFFERENT SEASONS, &c.

The rainfall has been a high one—the highest since 1885. At Taiping, 184·36 inches were recorded. Dividing the year into thirds, the rain recorded is as follow:—

1st third, 58·55 inches; 2nd third, 47·05 inches; 3rd third, 78·76 inches.

In my previous Annual Report, I indicated that it was during the middle third of the year—the comparatively dry season—there was the greatest prevalence of sickness and deaths. This, however, has not been the case in 1899, for it is in the last third that the largest number of admissions and deaths were returned; that is, during the period of greatest rainfall. The figures are:—

—				Admissions.	Deaths.
1st third	...	...	...	5,867	664
2nd	„	...	...	7,110	789
3rd	„	...	...	7,901	829

This difference may, I think, be explained by the fact that the immigration of Chinese markedly increased in the last third of the year, and great additions were made to the mining population of the State. Previous to that, from June to August, on account of the prevalence of plague, immigration from certain parts of China was prohibited.

REMARKS ON PARTICULAR DISEASES.

SMALL-POX.

Fifty-nine cases were brought to notice and six of these terminated fatally. The chief centre of the outbreak was in Krian. This district is thoroughly well protected by vaccination, but it is unfortunate in having along its border the State of Kedah, where vaccination has not received that prominent attention it deserves, small-pox occurred in an epidemic form in Kedah, and, from time to time, infected people came across the border into Krian and other districts in Perak, where the disease manifested itself. Kedah will, for many years, continue to be a breeding ground for small-pox and a danger to the health of Perak. In Krian the population is subject to considerable fluctuations yearly in connection with *padi* planting. When cultivation is in progress, and particularly at the time of the harvest, there is a large influx of foreign Malays. Kedah contributes its share, and

not an inconsiderable one, to the strangers who visit the State to assist in the *padi* industry. A large percentage of these people are unvaccinated. A communication has been addressed to the Kedah Government with the object of inducing them to undertake vaccination systematically. It would be well to go further and offer the loan of staff, and undertake to perform vaccination along the boundary of Perak, a belt of protected country could thus be established along the frontier.

In the month of March a disturbance arose in Krian through the Malays making an attempt to resist certain precautionary measures adopted for the suppression of small-pox. It was found necessary to transfer a body of the Malay States Guides into the district. The ring-leaders were arrested and suitably dealt with, and since then no further trouble has been experienced. Well recognised precautions must be adopted to stay the progress of infectious diseases, and even the Malays must learn to conform readily to orders of Government, and not be led away by agitators. As far as possible, every consideration is shewn for their religious prejudices and customs. Generally, it is advisable not to remove Malays, when attacked with small-pox, to a quarantine hospital. They more readily report cases—and this is a gain—if treated at their own homes, and with relations to attend on them. The practice has been, therefore, when circumstances allow, to interfere as little as possible, and this, as a rule, is practicable. The department requires power to regulate the manner of conducting funerals and disposal of dead in cases of infectious disease, so that the general community may be safe-guarded. On this point Government has been communicated with.

ENTERIC FEVER.

Enteric Fever no doubt prevails to a greater extent than the hospital returns—total treated 32, deaths 22, indicate. As a water-borne disease, it has all the necessary conditions to assist in its spread, chiefly amongst the Asiatics, and it is a matter of surprise that more cases are not brought to light.

CHOLERA.

Amongst a batch of Indian Immigrants obtained for the Railway Department, cholera manifested itself a few days after their arrival. Five cases with two deaths occurred. There was a history of cholera on board the immigrant steamer. From personal enquiries made at the time, it occurred to me that a reasonable explanation of this outbreak was that the new coolies had brought clothes infected with cholera discharges and washed them at the surface well from which the coolie lines derived their supply of drinking water. Amongst other precautions this well was immediately closed, and a fresh one was sunk.

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BERI-BERI.

There were 3,113 cases with 333 deaths, *i.e.*, 10·69 per cent. In 1898 the total treated was 3,945 with 327 deaths—8·28 per cent. As I have in another part of this report stated, the highest rainfall was in the last third of the year. The greatest number of admissions and deaths under beri-beri was also during this period. This would be in keeping with the opinion that excessive wet has an influence on the prevalence of this disease. In this instance, however, the fact must not be lost sight of that, in addition, at the latter end of the year, we had a considerable importation of Chinese coolies, the bulk of whom entered into work in the mines, and being non-acclimatized, would more readily contract beri-beri when located in an endemic area.

My experience in Perak, after having had the management and treatment of many thousand cases of beri-beri, does not permit me to class it as being an infectious disease. No instance has occurred to my knowledge of any members of the hospital staff or servants contracting the disease. The ward attendants mix freely with the patients and sleep in the wards which, on occasions, were overcrowded with beri-beri patients. Many of the attendants have been patients who have recovered from beri-beri, and as long as they remained at work in the hospital, in some cases for a year or two, they kept well. I have known some of these men leave the hospital service, return to tin mines, and after a few months come back with marked symptoms of beri-beri. There is evidence that it is a place disease. Residence and exposure at certain localities subjects one to an attack. Our hospital wards, though used for many years to house beri-beri cases, have not become local centres for spreading the disease. Their construction is such,—*vide* Appendix A*—that plenty of roof and window ventilation is provided for, and in addition the walls, made of the outer hard portion of the bertam palm stalk included in wooden frames, are arranged to move on pivots, either in a perpendicular or horizontal direction. The wards could be freely thrown open and the patients are enabled to live practically in the open air. This no doubt has a marked effect, for abundance of fresh air and light are good germ destroyers. The plan of hospital latrines, and the material out of which they are constructed, would also be a safeguard against retention and spread of infection. The floor of latrine is of cement. With the exception of a small portion of the roof, no wood enters into the construction of the body of building, which is made of metal. The commodes and pans are also made of metal. The whole latrine is freely ventilated. Appendices B* and C* shew plans of latrine and metal commodes.

MALARIAL FEVERS

There was an increase in the total number treated with fever, deaths and a lower death-rate in 1899. The chief interest, as regards malaria, centres in the discoveries made by Major Ross

* Not printed.

which justified him in attributing to certain species of mosquitoes the position of being carriers of the malarial germ. In a small way I have endeavoured to ascertain what different varieties of mosquito are to be met with here and to obtain some knowledge of their favourite breeding grounds and generally to become acquainted with their habits. The family of *Culex* is abundantly represented. I met with two varieties of these with spotted wings. The *Anopheles*, though not quite so numerous, have been found by me in the following districts:—Larut, Kuala Kangsar, Lower Perak, Batang Padang, in Kinta at Batu Gajah, Ipoh, and Kampar. Pressure of work prevented me from making further search, particularly in Krian. The *Culex* breeds in any place where there is water to receive their eggs. The size of body of water makes no difference to the larvæ. Any small collection of water in a hole in the trunks of trees, fallen logs, cut bamboo, coconut shell, tin vessels or any other receptacle, wells, large ponds or mine holes, would seem to be equally suited to their habits. As regards position, exposure to the sun, in the open or in the shade, apparently has no influence. What I have written would apply to the *Culices* generally. Further investigations are required, for it appears likely that different varieties would show a disposition to select their breeding haunts by having some regard for shade, quality of water, etc. I have found *Culex* larvæ in running streams with a fairly strong current, but the presence of weeds is necessary to protect them. After the stream was cleared of weeds the larvæ disappeared but returned when the sides were again overgrown. This would be a reason in favour of keeping the sides of drains, etc., free from weeds.

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As far as my searching has gone, *Anopheles* do not select bodies of water not formed in depressions and spaces in the earth to lay their eggs in. The larvæ, no doubt, derive food from the earth and the different forms of vegetable growths. I have not come across *Anopheles* larvæ in collections of water in holes or trees, nor in any receptacles lying about in houses and compounds. It is quite a mistake to state that *Anopheles* only breed in small puddles. The size and extent of surface of water makes no difference; the larvæ, no doubt, have been more easily found in a small collection of water, and unless carefully examined, their presence in larger bodies of water may easily be overlooked. I have found them in the smallest holes, such as those formed by the hoof of a bullock, ruts cut in a road by wheels, and upwards through all sizes of puddles, swamps, ponds, mine holes, old surface wells, and even in an artificial lake with a surface of water of about half a square mile in extent. Again the presence of fish or frogs in any body of water is not a hindrance to mosquito larvæ, either of the *Culex* or *Anopheles*, being there also. I have found these often in association in the same place. Fish may, to some extent, keep down the number of larvæ, but cannot be accepted as a means of preventing the mosquito breeding in any given collection of water. In searching for larvæ it

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must be remembered that they, especially the *Anopheles*, are keen sighted and at once disappear under the surface if one's hand is brought over the water. You will therefore probably miss finding them if only one or two dips are taken. Repeated lots of water should be taken up and examined, and in time the mosquito larvæ are forced to come to the surface to breathe and are then captured. It is also important not to be satisfied with search in the open water, by preference look amongst grass and weeds along the banks of a pool, and particularly so in large bodies of water where fish are present. The larvæ seemingly seek shelter amongst the overgrowing vegetation on the banks. A condensed milk tin will be found to be the most useful form of vessel for collecting larvæ in. They are always procurable, light and easy to carry, and the bright inner tinned surface lights up the water and enables the larvæ, even the very minute ones, to be easily detected.

To become acquainted rapidly with the varieties of mosquitoes to be found in any given locality there is no better or simpler method than that devised by Mr. L. Wray, Curator and State Geologist, Perak. A small butterfly net, preferably made of fine muslin, is fixed to the handle bar of a bicycle, horizontally, and you take a ride when the mosquitoes are out. You trawl the air in your progress, and get repaid with a collection of every form of mosquitoes that is about. The handle of the net is loosely affixed to the bicycle, so that when you slow down, a half turn will cause the net to overlap the mouth and close it up. To get the mosquitoes out, place the bag of the net in a cyanide death bottle. The *Anopheles* are not given to be abroad only about the time of sunset as has been asserted by some. They too like keeping later hours and may be met during night time. There are varieties of *Culex* which infest houses and go about and attack man freely, during the day time, at certain seasons of the year.

With all the knowledge gained, one seems, when looking at recent investigations from a practical point of view, to be still far from being in a position to stamp out malaria. Granted that the mosquito is the only or chief carrier of malarial germs in a country like this, where the rainfall is abundant, and collections of surface water very extensive, it appears to be hopeless to be able to discover and remove the breeding grounds of this insect pest. Experience out here would not favour one yielding to the mosquito the whole share in spreading malaria. We have had instances where there has been outbreaks of fever in localities where people formerly kept healthy, the only change in the surroundings being extensive felling of jungle and disturbance of soil. Before and after this, the usual extensive pools of water, which served as breeding grounds for mosquitoes, remained unchanged, they were not produced by the turning up of soil. A large field for research is available out here.

VENEREAL DISEASES.

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Venereal diseases continue to spread without let or hinderance. Compared with 1898, the number of cases received into hospitals have increased.

Year.			Treated.	Died.
1899	...	...	2,137	49
1898	...	...	1,677	41
1899 (increase)	...		460	8

LEPROSY.

I am pleased to record that the only difficulty in the way of forming an asylum for Malay lepers has been removed. The Colony of the Straits Settlements has given its consent to the Federated Malay States to use one of the Islands of the Pulau Sembilan group. Steps are being taken to erect the necessary buildings, and when completed, the Malay lepers would find a comfortable home there, and be treated in a manner in which their usual habits and customs will be interfered with as little as possible.

GENERAL SANITARY CONDITION OF THE STATE.

Under the various Sanitary Boards, sanitation continues to receive a certain measure of attention. The small outbreak of plague in Penang gave an extra impetus, and the inside of dwellings and compounds had a more thorough cleansing than they ever had, and in carrying it out we had greater aid than usual from the occupants who were generally only too willing to set their homes in order against the much dreaded scourge.

In Taiping, the main outlet drains from two parts of the town were extended, but the improvement was not attended with that measure of success that one would have reasonably expected. At the points of outfall the existing mines were a source of obstruction. The town of Taiping requires deep drainage to reduce markedly the level of subsoil water. Water is required, especially during the dry season, to flush out and maintain sweet the surface drains. This could be carried out at a small cost by bringing water from the artificial lake which is situated above town level.

The question of incinerators to destroy town refuse and night-soil has had attention through the year, and I submitted a report

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on the working of the existing incinerators at the request of Government. A plan of the one at Ipoh accompanies this report, Appendix *D**. It is intended to provide incinerators of this pattern, somewhat altered and improved, for all the towns. Their construction is inexpensive, and they are easily worked, and the result is quite satisfactory. The combustion in these incinerators is slow, the town refuse serves as sufficient fuel, and this refuse and night-soil are reduced to a harmless hash in a few hours' time. The residue is rich and could be utilized as manure.

In my last report I referred to the filling up of mine holes in the vicinity of our towns. This has been attempted by me in a small way. Mining water-courses have been deviated into old mines of some considerable size and depth, and in a few months' time they have been quite silted up. This is a work that may usefully be extended. It costs little and requires little attention. Low swampy land could thus be raised and serve in time for building sites.

VACCINATION.

Comparative Return of Vaccination for the years 1898 and 1899 :—

Year.	Number Vaccinated.					Result.			Total Vaccinated.	Percentage.	
	Europeans.	Eurasians.	Chinese.	Indians and others.	Malays.	Perfect.	Modified.	Failed.		Perfect.	Failed.
1898	8	26	1,061	536	4,367	4,238	163	545	5,998	70.65	9.08
1899	135	81	601	1,026	5,157	5,070	352	736	7,000	72.42	10.51
1899 { Increase { Decrease	127	55	—	490	790	832	189	191	1,002	1.77	1.43
	—	—	460	—	—	—	—	—	—	—	—

The above table indicates briefly the work done, and generally the results for 1899 are an improvement. The natives are willing to avail themselves of the protection offered them free of cost by Government. The prevalence of small-pox too, no doubt, stimulated them to come forward readily.

PERAK,
1899.

GAOL HOSPITALS.

PERAK,
1899,

Hospital.	Total. Treated.	Total Deaths.	Daily Average.		Per- centage of Deaths.
			Sick in Hospital.	Prisoners in Gaol.	
Central Prison, Taiping—					
1898	434	3	14·70	361·83	·69
1899	449	4	20·67	351·28	·89
Batu Gajah Gaol—					
1898	680	13	19·67	260·06	1·91
1899	672	12	28·47	209·20	1·78
Krian Gaol—					
1898	64	—	1·30	35·52	—
1899	29	—	·39	38·88	—

At the Central Prison, Taiping, the chief point deserving notice is the small outbreak of beri-beri which began in October. Twelve cases were admitted for this disease up to the end of December. Looked at only as regards numbers, perhaps it does not appear to be of much importance, but at the same time it is unfortunate that a disease like beri-beri has manifested itself in a convict establishment which up till now has been remarkably healthy. There was no change in the diet table which has been in use for some years and gave satisfactory results. The chief change has been since the month of August from when the bulk of the convicts were made to work inside the goal wall, the only prisoners employed on extra-mural work was the quarry gang. This gang has been remarkably healthy and free from beri-beri. The disease has been confined entirely to the intra-mural gangs, and especially those at sedentary work like tailors and rattan-workers. In case beri-beri shews a tendency to increase I should advise the men to be again detailed for work outside the goal wall.

LUNATIC WARD.

A. total of 157 cases were treated, of these 45 died. The death-rate was high—28·66 per cent. The District Surgeon gives, as an explanation, the fact that from August there

appeared amongst the lunatics a form of general œdema. This alone accounted for 19 deaths.

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OUT-DOOR DEPARTMENT.

Dispensaries at district hospitals :—

Year.	New Cases.	Repetitions.	Total Visits.
1898... 	29,105	16,188	45,293
1899... 	25,955	14,588	40,543

Travelling Dispensaries :—

Year.	New Cases.	Repetitions.	Total Visits.
1898... 	22,972	18,158	41,130
1899... 	24,894	13,802	38,696

M. J. WRIGHT, M.B., C.M.,

State Surgeon, Perak.

13th March, 1900.

PERAK,
1899.

RETURN of the STATISTICS of POPULATION of PERAK
for the YEAR 1899.

	Europeans and Eurasians.	Chinese.	Malays.	Tamils.	Others.
No. of Inhabitants in 1898...	1,289	140,108	107,476	14,161	9,472
„ Births during the year 1899.	34	576	3,860	371	45
„ Deaths during the year 1899.	10	5,213	2,580	871	82
„ Immigrants during the year 1899.	1,528	54,663	8,582	10,366	—
„ Emigrants during the year 1899.	1,338	32,619	8,084	7,437	—
„ Inhabitants in 1899...	1,503	157,515	109,254	16,590	9,435
Increase	214	17,407	1,778	2,429	—
Decrease	—	—	—	37	—

METEOROLOGICAL RETURN of TAIPING for the YEAR 1899.

	Temperature.						Rainfall.	
	Solar Maximum.	Minimum on Grass.	Shade Maximum.	Shade Minimum.	Range.	Mean.	Amount in Inches.	Degree of Humidity.
January ...	109.2	67.5	90.0	69.5	20.5	77.1	18.44	84
February ...	111.0	64.5	90.5	67.0	23.5	78.0	10.39	80
March ...	110.5	68.2	92.3	70.0	22.3	78.2	17.99	82
April ...	110.6	68.0	92.5	69.0	23.5	79.3	11.73	77
May ...	112.0	68.5	93.3	71.0	22.3	79.7	21.30	81
June ...	110.5	68.0	92.3	71.0	21.3	80.0	13.66	77
July ...	110.0	68.0	94.0	70.4	23.6	80.6	1.54	75
August...	111.5	69.5	92.5	71.0	21.5	79.6	10.55	78
September ...	111.6	68.0	92.0	71.0	21.0	78.9	20.18	82
October ...	111.5	68.0	90.3	71.0	19.3	78.3	27.47	82
November ...	109.0	65.2	90.0	68.4	21.6	77.3	17.35	86
December ...	109.6	67.0	90.6	69.3	21.3	77.2	13.76	86
	110.6	67.5	91.7	69.9	21.8	78.7	184.36	81

RETURN of DISEASES and DEATHS in 1899 at the following INSTITUTIONS :—ELEVEN DISTRICT HOSPITALS at TAIPING, KUALA KANGSAR, BATU GAJAH, GOPENG, IPOH, KAMPAR, TELUK ANSON, TAPAH, PARIT BUNTAR, BAGAN SERAI, and SELAMA ; TWO GAOL HOSPITALS at TAIPING and BATU GAJAH ; ONE LUNATIC ASYLUM at TAIPING ; ONE LEPER ASYLUM at PULAU JEREJAK.

PERAK
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES—			
Small-pox	5	—	
Chicken-pox	13	—	
Measles	23	—	
Plague... ..	—	—	
Mumps	7	—	
Febricula	12	—	
Enteric Fever	32	22	
Cholera	1	—	
Dysentery	1,407	342	
Beri-beri	3,113	333	
Malarial Fever—			
(a.) Intermittent	4,260	81	
(b.) Remittent	488	120	
(c.) Pernicious R.	3	3	
Phagedæna—			
(a.) Sloughing	23	11	
(b.) Hospital gangrene	—	—	
Erysipelas	46	8	
Pyæmia	4	3	

PERAK,
1899

Return of Diseases and Deaths—cont.

Diseases	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES—cont.			
Septicæmia	2	2	
Tetanus	3	—	
Tubercle	24	7	
Leprosy—			
(a.) Tubercular	232	49	
(b.) Anæsthetic			
Yaws	7	—	
Syphilis—			
(a.) Primary	486	2	
(b.) Secondary	1,423	46	
(c.) Inherited	1	—	
Gonorrhœa	227	1	
Alcoholism	14	3	
Rheumatic Fever	—	—	
Rheumatism	243	1	
Gout	—	—	
New Growths, non-malignant ...	21	3	
„ malignant	20	7	
Rickets	—	—	
Anæmia	631	70	
Myxœdema	—	—	
Diabetes mellitus	—	—	
„ insipidus	1	—	
Debility	271	32	
Other Diseases	61	9	

*Return of Diseases and Deaths—cont.*PERAK,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES—			
DISEASES OF THE NERVOUS SYSTEM—			
Sub-section 1—			
Neuritis	27	1	
Meningitis	2	3	
Myelitis	1	—	
Hydrocephalus	—	—	
Encephalitis	—	—	
Abscess of brain	2	2	
Congestion of brain	5	—	
Sub-section 2—			
Apoplexy	16	4	
Paralysis... ..	65	7	
Bed-sore	—	—	
Chorea	1	—	
Epilepsy	28	2	
Neuralgia	16	—	
Hysteria... ..	2	—	
Sub-section 3—			
Idiocy	1	1	
Mania	91	26	
Melancholia	53	16	
Dementia	45	8	
Delusional Insanity	3	—	
Other Diseases of the System ...	34	5	

PERAK,
1899.

Return of Diseases and Deaths—cont.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES— <i>cont.</i>			
DISEASES OF THE EYE—			
Conjunctiva—			
Conjunctivitis	131	—	
Cornea—			
Keratitis... ..	39	1	
Ulceration	51	1	
Opacity	15	1	
Schlerotic—			
Staphyloma	7	1	
Iris—			
Iritis	21	—	
Glaucoma	2	—	
Hypopyon	2	—	
Lens—			
Cataract	12	—	
Eyelids—			
Entropion	12	—	
Other Eye Diseases	44	—	
DISEASES OF THE EAR—			
Inflammation	4	1	
Other Ear Diseases	5	—	
DISEASES OF THE NOSE—			
Inflammation	—	—	
Other Nose Diseases	2	—	

*Return of Diseases and Deaths—cont.*PERAK,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES— <i>cont.</i>			
CIRCULATORY SYSTEM—			
Membranes—			
Pericarditis	3	3	
Endocarditis	—	—	
Valvular Disease	104	26	
Muscular Substance—			
Hypertrophy	1	—	
Dilatation	—	—	
Other Diseases of the System ...	15	2	
RESPIRATORY SYSTEM—			
Larynx—			
Laryngitis	9	1	
Bronchi—			
Bronchitis	325	23	
Asthma	73	7	
Lung—			
Congestion	—	—	
Hæmoptysis	11	3	
Pneumonia	158	81	
Gangrene	3	3	
Phthisis	585	273	
Emphysema	1	1	
Pleura—			
Pleurisy	23	6	
Empyema	8	4	
Other Diseases of the System ...	5	1	

PERAK.
1899.

Return of Diseases and Deaths—cont.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES— <i>cont.</i>			
DIGESTIVE SYSTEM—			
Mouth—			
Stomatitis	15	—	
Dental Periostium—			
Gum-boil	7	—	
Fauces—			
Tonsillitis	2	—	
Stomach—			
Gastritis... ..	38	—	
Dyspepsia	108	3	
Intestines—			
Enteritis	2	1	
Sprue	4	2	
Hernia	25	2	
Constipation	64	—	
Diarrhœa	964	264	
Rectum and Anus—			
Hemorrhoids	28	—	
Liver—			
Hepatitis	14	—	
Abscess Liver	5	3	
Cirrhosis... ..	62	35	
Conjestion Liver	3	—	
Jaundice.	48	17	

*Return of Diseases and Deaths—cont.*PERAK,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES— <i>cont.</i>			
Digestive System— <i>cont.</i>			
Peritoneum—			
Peritonitis	16	9	
Ascites	97	40	
Other Diseases of the System ...	125	9	
LYMPHATIC SYSTEM—			
Spleen—			
Splenitis	84	—	
Bubo	150	1	
Lymphangitis	20	1	
Elephantiasis	4	—	
Other Diseases of the System ...	23	4	
URINARY SYSTEM—			
Kidney—			
Acute Nephritis	102	34	
Bright's Disease	175	53	
Hæmaturia	3	—	
Chyluria	—	—	
Bladder—			
Cystitis	5	—	
Calculus	8	—	
Other Diseases of the System ...	15	—	
GENERATIVE SYSTEM—			
Urethra—			
Stricture... ..	25	1	

PERAK,
1899.

Return of Diseases and Deaths—cont.

Diseases	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES— <i>cont.</i>			
Generative System— <i>cont.</i>			
Prepuce—			
Phimosis... ..	22	—	
Paraphimosis	9	—	
Penis—			
Soft Chancre	115	—	
Scrotum—			
Sloughing Scrotum	31	3	
Tunica Vaginalis—			
Hydrocele	9	—	
Testicle—			
Orchitis	49	—	
Epididymitis	2	—	
Other Diseases (male)	24	1	
Uterus—			
Metritis	4	—	
Uterine Displacements... ..	3	—	
Amenorrhœa	2	—	
Dysmenorrhœa	4	—	
Menorrhagia	1	—	
Leucorrhœa	2	—	
Other Diseases (female)	34	2	
ORGANS OF LOCOMOTION—			
Bones—			
Ostitis	4	—	

Return of Diseases and Deaths—cont.

PERAK,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES— <i>cont.</i>			
Organs of Locomotion— <i>cont.</i>			
Bones— <i>cont.</i>			
Periostitis	13	—	
Caries	2	—	
Necrosis	21	1	
Joints—			
Synovitis	70	2	
Ankylosis	5	—	
Spine—			
Caries Spine	—	—	
Curvature Spine	1	—	
Muscles—			
Myalgia	14	—	
Other Diseases	44	2	
CONNECTIVE TISSUE—			
Cellulitis	37	5	
Abscess	485	17	
Gangrene	14	5	
SKIN—			
Eczema	140	—	
Psoriasis	3	—	
Herpes	4	—	
„ Zoster	7	—	
Ulcer	2,073	53	
Boil...	45	—	
Carbuncle	25	1	

PERAK,
1899,

Return of Diseases and Deaths—cont.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES— <i>cont.</i>			
Skin— <i>cont.</i>			
Onychia	2	—	
Whitlow	1	—	
Other Diseases	50	1	
GENERAL INJURIES—			
Burns and Scalds	10	—	
Sunstroke	—	—	
Multiple Injury	2	—	
Starvation	1	—	
Shock	2	—	
LOCAL INJURIES—			
Burns and Scalds	26	3	
Wounds	729	9	
Sprains	38	—	
Dislocations	13	1	
Fractures, simple	83	3	
„ compound	40	5	
Other Injuries	156	8	
SURGICAL OPERATIONS—			
Amputation, Finger	1	—	
„ Arm	2	—	
„ Toe	1	—	
„ Leg	1	1	
Enucleation, Eyeball	1	—	

Return of Diseases and Deaths—cont.

PERAK,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL INJURIES— <i>cont.</i>			
Surgical Operations— <i>cont.</i>			
Excision Cursæ	1	—	
„ Fatty Tumour	1	—	
Cæsarean Section	2	1	
For Hæmoerhoids	1	—	
Malformations	2	—	
POISONS—			
Mercury	4	—	
Alcohol	1	—	
Opium... ..	27	1	
Other Poisons	1	—	
Poisoned Wounds	41	2	
PARASITES—			
Distomum Sinense	2	2	
Tœnia Solium	1	—	
Ascaris Lumbricoides	35	—	
Anchylostomum Duodenale ...	29	5	
Oxyuris Vermicularis	1	—	
Filaria Medinensis	7	—	
Acarus Scabiei	98	—	
Tinea Circinata	9	—	
Other Parasites	1	—	
Under Observation	127	—	
Total... ..	22,276	2 282	

ST. KITTS,
NEVIS, AND
ANGUILLA,
1899.

No. 14.

ST. KITTS, NEVIS, AND ANGUILLA.

ST. KITTS.

RETURN of the STATISTICS of POPULATION for the
YEAR 1899.

	Europeans and Whites.	Africans.	East Indians.	Chinese and Malays.	Mixed and Coloured.	
Number of inhabitants in 1898.						32,842
Number of Births during the year 1899.						1,246
Number of Deaths during the year 1899.						983
Number of Immigrants dur- ing the year 1899.						unknown
Number of Emigrants during the year 1899.						unknown
Number of inhabitants in 1899.						33,105
Increase or Decrease						263

NEVIS.

RETURN of the STATISTICS of POPULATION for the
YEAR 1899.ST. KITTS,
NEVIS, AND
ANGUILLA,
1899.

—	Europeans and Whites.	Africans.	East Indians.	Chinese and Malays.	Mixed and Coloured.	—
Number of inhabitants in 1898.						14,237
Number of Births during the year 1899.						559
Number of Deaths during the year 1899.						387
Number of Immigrants during the year 1899.						unknown
Number of Emigrants during the year 1899.						unknown
Number of inhabitants in 1899.						14,409
Increase or						172
Decrease						

ANGUILLA.

RETURN of the STATISTICS of POPULATION for the
YEAR 1899.

—	Europeans and Whites.	Africans.	East Indians.	Chinese and Malays.	Mixed and Coloured.	—
Number of inhabitants in 1898.						4,298
Number of Births during the year 1899.						122
Number of Deaths during the year 1899.						57
Number of Immigrants during the year 1899.						unknown
Number of Emigrants during the year 1899.						unknown
Number of inhabitants in 1899.						4,363
Increase or						65
Decrease						

ST. KITTS,
NEVIS, AND
ANGUILLA
1899.

ST. KITTS.

METEOROLOGICAL RETURN for the YEAR 1899.

	Temperature.						Rainfall.		Winds.		Remarks.
	Solar Maximum.	Minimum on Grass.	Shade Maximum.	Shade Minimum.	Range Mean Daily.	Mean.	Amount in Inches.	Degree of Humidity.	General Direction.	Average Force.	
January	82	68	9-0	75-8	3-86	76	E.	10-9	
February	82	66	9-0	75-7	1-21	71	E.	11-2	
March	82	65	8-9	75-6	1-00	66	E.	9-9	
April	83	70	8-1	77-6	2-34	71	E.	9-7	
May	86	71	9-1	80-0	0-53	74	E.	9-5	
June	87	71	11-0	79-7	3-57	76	E.	10-0	
July	87	70	10-2	80-6	2-51	77	E.	11-5	
August	88	70	8-6	81-4	3-26	78	E.	12-0	
September	88	70	9-4	81-2	5-14	80	E.	10-6	
October	88	70	11-1	80-4	6-64	78	E.	7-1	
November	89	70	10-9	79-8	5-89	78	E.	8-2	
December	85	64	11-9	76-8	3-12	70	N.E.	8-3	
Yearly Mean	—	—	9-8	78-7	39-07	75	E.	9-9	

RETURN of DISEASES and DEATHS in 1899 at the following
 INSTITUTIONS :—BASSETTERRE MATERNITY COTTAGE,
 LAZARETTO, POGSON HOSPITAL, NEVIS INFIRMARY.

ST. KITTS,
 NEVIS, AND
 ANGUILLA,
 1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES—			
Small-pox	—	—	
Measles	—	—	
Typhus	—	—	
Dengue	—	—	
Influenza	1	—	
Diphtheria	—	—	
Febricula	—	—	
Enteric Fever	—	—	
Cholera	—	—	
Dysentery	11	9	
Yellow Fever... ..	—	—	
Malarial Fever—			
(a.) Intermittent	—	—	
(b.) Remittent	30	1	
(c.) Pernicious R.	—	—	
Erysipelas	6	2	
Pyæmia	—	—	
Septicæmia	—	—	
Tetanus	3	1	
Tubercle	—	—	
Carried forward	51	13	

ST. KITT'S,
NEVIS, AND
ANGUILLA,
1899.

Basseterre Maternity Cottage, &c.,—cont.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
Brought forward ...	51	13	
GENERAL DISEASES— <i>cont.</i>			
Leprosy—			
(a.) Tubercular ...	31	5	
(b.) Anæsthetic ...	44	4	
Yaws ...	4	—	
Syphilis—			
(a.) Primary ...	1	—	
(b.) Secondary ...	3	2	
(c.) Inherited ...	—	—	
Gonorrhœa ...	—	—	
Hydrophobia ...	—	—	
Scurvy ...	—	—	
Alcoholism ...	—	—	
Delirium Tremens ...	—	—	
Rheumatism ...	17	—	
Rheumatic Fever ...	—	—	
Gout ...	—	—	
New Growth, non-malignant ...	—	—	
„ malignant ...	1	—	
Anæmia ...	—	—	
Diabetes mellitus ...	—	—	
„ insipidus ...	—	—	
Debility ...	7	3	
Total ...	159	27	

Basseterre Maternity Cottage, &c.—cont.

ST. KITTS,
NEVIS, AND
ANGUILLA,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
Brought forward	159	27	
LOCAL DISEASES—			
DISEASES OF THE NERVOUS SYSTEM—			
Sub-section 1—			
Diseases of the Nerves—			
Neuritis	—	—	
Meningitis	1	—	
Myelitis	—	—	
Hydrocephalus	—	—	
Encephalitis	—	—	
Abscess of Brain	—	—	
Congestion of Brain... ..	—	—	
Sub-section 2—			
Functional Nervous Disorders—			
Apoplexy	—	—	
Paralysis	3	—	
Chorea	—	—	
Epilepsy	5	1	
Neuralgia	—	—	
Hysteria	—	—	
Sub-section 3—			
Mental Diseases—			
Idiocy	—	—	
Mania	1	—	
Melancholia	—	—	
Dementia	—	—	
Delusional Insanity	1	1	
Carried forward	170	29	

ST. KITTS,
NEVIS, AND
ANGUILLA,
1899.

Basseterre Maternity Cottage. &c.—cont.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
Brought forward	170	29	
LOCAL DISEASES—<i>cont</i>			
Diseases of the Eye	1	—	
" " Ear	—	—	
" " Nose	—	—	
" " Circulatory System	7	2	
" " Respiratory System	13	7	
" " Digestive System ...	18	4	
" " Lymphatic System	2	—	
" " Urinary System ...	11	6	
" " Generative System	—	—	
" " Male Organs ...	13	1	
" " Female Organs ...	53	4	
" " Organs of Locomotion.	4	—	
" " Cellular Tissue ...	33	3	
" " Skin	3	—	
Injuries, General	—	—	
" Local	54	2	
Malformations	—	—	
Poisons	—	—	
Parasites	1	—	
	383	58	
Surgical Operations	34	3	

CUNNINGHAM HOSPITAL.

ST. KITTS,
NEVIS, AND
ANGUILLA,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES—			
Small-pox	—	—	
Measles	—	—	
Typhus	—	—	
Dengue	—	—	
Influenza	—	—	
Diphtheria	—	—	
Febricula	8	—	
Enteric Fever	—	—	
Cholera	—	—	
Dysentery	40	18	
Yellow Fever... ..	—	—	
Malarial Fever—			
(a.) Intermittent	2	1	
(b.) Remittent	31	3	
(c.) Pernicious R.	—	—	
Erysipelas	—	—	
Pyæmia	1	1	
Septicæmia	1	1	
Tetanus	1	1	
Tubercle	54	25	
Leprosy—			
(a.) Tubercular	—	—	
(b.) Anæsthetic	—	—	
Yaws	—	—	
Carried forward	138	50	

Cunningham Hospital—cont.

ST. KITTS,
NEVIS, AND
ANGUILLA,
1899.

Diseases.	Yearly Total		Remarks.
	Cases.	Deaths.	
Brought forward	138	50	
GENERAL DISEASES— <i>cont.</i>			
Syphilis—			
(a.) Primary	31	—	
(b.) Secondary	101	9	
(c.) Inherited	6	2	
Gonorrhœa	7	—	
Hydrophobia	—	—	
Scurvy	—	—	
Alcoholism	2	—	
Delirium Tremens	1	—	
Rheumatism	9	—	
Rheumatic Fever	—	—	
Gout	—	—	
New Growth, non-malignant	28	1	
New Growth, malignant	10	—	
Anæmia	5	1	
Diabetes mellitus	1	—	
Diabetes insipidus	—	—	
Debility	37	10	
LOCAL DISEASES—			
DISEASES OF THE NERVOUS SYSTEM—			
Sub-section 1—			
Diseases of the Nerves—			
Neuritis	—	—	
Carried forward	376	73	

Cunningham Hospital—cont.

ST. KITTS,
NEVIS, AND
ANGUILLA,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
Brought forward ...	376	73	
LOCAL DISEASES—cont.			
Diseases of the Nervous System—cont.			
Sub-section 1—cont.			
Diseases of the Nerves—cont.			
Meningitis ...	3	1	
Myelitis ...	—	—	
Hydrocephalus ...	—	—	
Encephalitis ...	—	—	
Abscess of Brain ...	—	—	
Congestion of Brain ...	—	—	
Sub-section 2—			
Functional Nervous Disorders—			
Apoplexy ...	—	—	
Paralysis ...	28	12	
Chorea ...	1	—	
Epilepsy ...	13	—	
Neuralgia ...	2	—	
Hysteria ...	7	—	
Sub-section 3—			
Mental Diseases—			
Idiocy ...	2	—	
Mania ...	9	1	
Melancholia ...	4	—	
Dementia ...	3	—	
Delusional Insanity ...	5	—	
Carried forward ...	453	87	

Cunningham Hospital—cont.

ST. KITTS,
NEVIS, AND
ANGUILLA,
1899.

Diseases.	Yearly Total.		Remarks
	Cases.	Deaths	
Brought forward	453	87	
LOCAL DISEASES—cont.			
Diseases of the Eye	56	—	
" " Ear	1	—	
" " Nose	1	—	
" " Circulatory System	34	11	
" " Respiratory System	20	2	
" " Digestive System ...	92	7	
" " Lymphatic System	5	—	
" " Urinary System ...	45	17	
" " Generative System	—	—	
" " Male Organs ...	75	—	
" " Female Organs ...	21	—	
" " Organs of Locomotion	25	—	
" " Cellular Tissue ...	46	1	
" " Skin... ..	78	2	
Injuries, General	—	—	
" Local	68	—	
Malformations	1	—	
Poisons	—	—	
Parasites... ..	18	3	
No Appreciable Disease	33	—	
Total	1,072	130	
Surgical Operations	205	6	

No. 15.

ST. LUCIA
1899

ST. LUCIA.

RETURN of the STATISTICS of POPULATION for the
YEAR 1899.

	Europeans and Whites.	Africans.	East Indians.	Chinese and Malays.	Mixed and Coloured.	Total.
Number of inhabitants in 1899						48,650
Number of Births during the year 1899.						1,865
Number of Deaths during the year 1899.						1,191
Number of Immigrants during the year 1899.						
Number of Emigrants during the year 1899.						
Number of inhabitants in 1899.						
Increase or						
Decrease						

ST. LUCIA, RETURN OF DISEASES and DEATHS in 1899 at the following
 1899. INSTITUTIONS:—VICTORIA HOSPITAL, YAWS HOSPITAL,
 POOR ASYLUM, SOUFRIERE HOSPITAL, VIEUX FORT
 HOSPITAL, DENNERY HOSPITAL.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES—			
Small-pox	—	—	
Measles	—	—	
Typhus	—	—	
Dengue	—	—	
Influenza	—	—	
Diphtheria	—	—	
Febricula	98	—	
Enteric Fever	—	—	
Cholera	—	—	
Dysentery	4	—	
Yellow Fever	—	—	
Malarial Fever—			
(a.) Intermittent	270	—	
(b.) Remittent	108	6	
(c.) Pernicious R.	3	3	
Erysipelas	2	—	
Pyæmia	1	1	
Septicæmia	—	—	

Victoria Hospital, &c.—cont.

ST. LUCIA,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES—cont.			
Tetanus	3	3	
Tubercle	11	5	
Leprosy—			
(a.) Tubercular	4	—	
(b.) Anæsthetic	1	—	
Yaws	73	1	
Syphilis—			
(a.) Primary	18	—	
(b.) Secondary	55	1	
(c.) Inherited	3	3	
Gonorrhœa	3	—	
Hydrophobia	—	—	
Scurvy	—	—	
Alcoholism	3	—	
Delirium Tremens	—	—	
Rheumatism	53	1	
Rheumatic Fever	1	—	
Gout	—	—	
New Growth, non-malignant ...	11	—	
„ malignant	20	4	
Anæmia	68	—	
Diabetes mellitus	—	—	
„ insipidus	—	—	
Debility	85	28	

ST. VINCENT,
1899

Victoria Hospital, &c.—cont.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES—			
DISEASES OF THE NERVOUS SYSTEM—			
Sub-section 1—			
Diseases of the Nerves—			
Neuritis	8	—	
Meningitis	6	4	
Myelitis	1	—	
Hydrocephalus	—	—	
Encephalitis	—	—	
Abscess of Brain	—	—	
Congestion of Brain	—	—	
Sub-section 2—			
Functional Nervous Disorders—			
Apoplexy	3	3	
Paralysis	13	3	
Chorea	—	—	
Epilepsy	12	5	
Neuralgia	15	—	
Hysteria	3	—	
Sub-section 3—			
Mental Diseases—			
Idiocy	4	—	
Mania	1	—	
Melancholia	—	—	
Dementia	1	—	
Delusional Insanity	3	—	

Victoria Hospital, &c.—cont.

ST. LUCIA
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES—cont.			
Diseases of the Eye	18	—	
" " Ear	8	1	
" " Nose	—	—	
" " Circulatory System	109	24	
" " Respiratory System	237	38	
" " Digestive System ...	153	25	
" " Lymphatic System	15	—	
" " Urinary System ...	26	4	
" " Generative System—			
Male Organs ...	28	1	
Female Organs ...	17	2	
" " Organs of Locomotion.	9	—	
" " Cellular Tissue ...	62	1	
" " Skin	114	1	
Injuries, General	91	1	
" Local	67	1	
Surgical Operations	36	6	
Malformations	1	—	
Poisons	—	—	
Parasites... ..	47	—	
Ulcers	120	—	
Gangrene	2	1	
Not classified	207	—	
Total	2,335	177	

ST. LUCIA,
1899.

No. 16.

ST. LUCIA.

REPORT ON FILARIA SANGUINIS HOMINIS

Castries,

21st March, 1900.

SIR,

I HAVE the honour to forward, for the information of His Honour the Administrator, a second report on *Filaria Sanguinis Hominis*.

I stated in my paper on the same subject last year that I had discovered the existence of *Filaria Demarquay* in St. Lucia. I described the embryo worm found in the blood of many of our natives, and noticed its peculiar characteristics and movements, on the field of the microscope. In continuing the study of this interesting subject I had two objects in view; one was to endeavour to find the parental form of *Filaria Demarquay*, and the second to trace out, if possible, the particular species of mosquito which acted as intermediate host to this special worm.

I pointed out last year how the mosquito acted as intermediate host by sucking the blood of a person in whom *Filaria* were prevalent, and the different changes which occurred in the transition stage between a tiny embryo in the blood, its new life when swallowed by man in drinking water, and finally its mature stage when settled in the lymphatic system where it becomes the parent of a numerous tribe of embryo *Filaria*, which find their way into the general circulation of the affected individual, where they can be detected by the microscope.

The parental form of *Filaria Nocturna* has been found by many observers since 1876, and is more easily come across than any of the other varieties. This may be explained by its wide distribution and prevalence in many parts of the world, in fact in all tropical countries where Elephantiasis is known to exist.

The other parent blood-worms are more difficult to detect. Dr. Daniels, of British Guiana, found the parental form of *Filaria Ozzardi*—blunt-tailed variety—in some Caribs who inhabit the interior of the country (*British Medical Journal*, 16th April, 1898). Subsequent investigation tends to prove that

these worms are identical with the parent form of *Filaria Perstans*, which was found and described by Dr. Manson in some natives of Calabar and the Congo. The embryo *Filaria Perstans* under the microscope bears the closest resemblance to the blunt-tailed *Demerara* variety, and it was suggested by Dr. Manson that they probably belong to the same species. This theory has now been proved correct, as the parent worms of both species are found to be identical in size, shape, and other characteristics. The two men from the Congo who suffered from Sleeping-sickness or Negro Lethargy, and were sent to England for treatment, had *Filaria Perstans* in the blood.

ST. LUCIA,
1899.

The parental form of the sharp-tailed *Demerara* blood-worm (*Filaria Ozzardi*) was also discovered by Dr. Daniels. He describes it in the *British Guiana Medical Annual* for 1898, and also more fully in the *British Medical Journal* of 17th June, 1899. He found a complete worm (female) and a portion of another (male) "on stripping the peritoneum from the anterior abdominal wall." Up to date these are the only parental forms of the sharp-tailed *Filaria Ozzardi* described.

Previous to 1898 *Filaria Demarquay* had only been found in the blood of natives of St. Vincent, W.I., and of New Guinea. In 1898 I discovered the embryo *Filaria Demarquay* in St. Lucia, as already stated, in the peripheral circulation of many natives of the Island. Last year I was fortunate enough to meet with the parent worm when making a necropsy on a woman whose blood contained numerous specimens of the embryo *Filaria Demarquay*. I found a complete, or nearly complete, female worm, and a large portion of another in the upper part of the mesentery. I submitted the worm to Dr. Ozzard, of *Demerara*, for identification and comparison with the two British Guiana species. He very kindly examined it, and sent me the following description:—"A female parental form of *Filaria Demarquay* was recently sent me by Dr. Otho Galgey, of St. Lucia, W.I. The specimen was a dead dried one on a glass slide. I endeavoured to clarify it by means of absolute alcohol and oil of cloves; but not so successfully as could have been wished. It was then stained with logwood.

"The specimen is a complete one, and measures, in its dried condition, about $2\frac{1}{2}$ inches. At its broadest part it measures about $\frac{1}{100}$ inch. The head and tail ends are deeply stained, interfering somewhat with a detailed examination.

"The head is rounded, and an indication of a minute mouth can be made out with a high power. No differentiation of alimentary canal into oesophagus and intestine can be made out. To all appearance the head is similar to that of the female parental form of *Filaria Perstans* as described by Dr. Daniels in B.M.J. of 16th April, 1898.

"At a distance of about $\frac{1}{40}$ inch from the head, the specimen is unfortunately broken; and it is probably at this point that

ST. LUCIA, 1899. the vagina opens externally, as at no other part can there be made out any indication of the termination of the vagina or the ovarian tubules.

"An alimentary canal is clearly seen running the whole length of the specimen; and to all appearances this canal terminates at the extreme tip of the tail, instead of in a papilla such as is the case in the parental forms of *F. Nocturna* and *F. Perstans*. It is true that at a distance of about $\frac{1}{100}$ inch from the tip of the tail there is a slight divergence in the outline of the animal; but under high powers, even, no appearance of the intestine terminating there is suggested, nor does it appear to be anything more than a slight irregularity in outline.

"The absence of an anal papilla, therefore, is a marked contrast to what obtains in the parental forms of *F. Nocturna* and *F. Perstans*.

"The tail is sharply curved for the last $\frac{1}{100}$ or more, similar to the curves of the tails of other parental forms.

"The tip of the tail appeared to be made up of four papillary processes (two slightly overlapping the other two) instead of two, as described by Dr. Daniels in the female parental form of *F. Perstans*.

"As in other parental forms, there are two ovarian tubes containing ova and embryos in various stages of development. The embryos are so curled up and crowded together that it is almost impossible to say whether their tails are sharp or blunt; but as Dr. Galgey ascertained that the host during lifetime contained numerous *F. Demarquaii* and no blunt-tailed embryos, it is not of much importance.

"The breadth of the ova varied from $\frac{1}{3000}$ inch to $\frac{1}{2000}$ inch. The breadth of the ova of *F. Bancrofti* as given by Lewis, varies from $\frac{1}{1300}$ to $\frac{1}{700}$ inch. In other words the ova of the parental form of *F. Demarquaii* are about equal in breadth to that of embryo *F. Nocturna* itself. So that it is easily understood that diseases such as Elephantiasis do not occur in those the hosts of *F. Demarquaii* or the other minute *Filariæ* such as *F. Perstans*; whereas they may do so in those the hosts of *F. Nocturna*."

From the foregoing minute and lucid description it would appear that the parental form of *Filaria Demarquay* possesses some points of difference from all the other parent worms as yet described.

The parental form of *F. Demarquay* is extremely difficult to find. Many months often elapse without meeting with a Filariated subject for a post-mortem examination. Even when found it is not always possible to ferret out the parent worms. I have searched carefully more than once with a powerful magnifying glass in the body of a host whose blood contained

embryo *F. Demarquay* without succeeding in tracing the parent-worms. They are exceedingly fine, like glossy silvery hairs, and resemble shining shreds of fibrous tissue.

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The positions in which the different species of parent worms have been discovered vary much. The glandular system is the haunt of *F. Nocturna*, whereas the blunt-tailed *F. Ozzardi* were found "in the fat connective tissues in the upper part of the mesentery, at the base of the mesentery, the fat surrounding the pancreas, and at the base of the gastric ligaments. In one case they were also found in the fat beneath the parietal pericardium at the base of the heart.

The parent worms of the sharp-tailed *Filaria Ozzardi* were discovered, as I said before, "on stripping the peritoneum from the anterior abdominal wall. The worms were partly detached in the process, and consequently must have been lying in the subperitoneal connective tissue."

The parental form of *Filaria Perstans* had not been discovered when Dr. Manson's *Manual of Tropical Diseases* was published in 1899, for I find on p. 496—"the parental form and the life-history of *F. Perstans* are quite unknown."

In *British Medical Journal*, of 16th December, 1899, an account of the necropsy on Eli Neboko, the black man from the Congo, who died at Charing Cross Hospital of Negro Lethargy, is given. At p. 1667 the following occurs:—"An adult *Filaria* was found by Mr. O'Neil in the retroperitoneal tissue near the aorta, and also several others at the root of the mesentery. These were subsequently identified by Dr. Manson as identical with those described by Dr. Daniels as occurring in the Buck Indians of British Guiana." This, then, further establishes the identity of *F. Perstans* of Africa, and *F. Ozzardi* (blunt-tailed) of British Guiana.

The adult forms of *F. Nocturna*, *F. Ozzardi* (blunt-tailed) or *F. Perstans*, as they are the same; *F. Ozzardi* (sharp-tailed); and finally *F. Demarquay* have been discovered. It now remains to find more specimens of the last two so as to differentiate one from the other.

The pathological rôle and the life-history of several of these *Filariæ* are still unknown. *F. Nocturna* is the recognised cause of Elephantiasis, and *F. Perstans* is supposed to be responsible for Negro Lethargy (*British Medical Journal*, 16th December, 1899). But the part played by the other *Filariæ* has not yet been ascertained. It seems incredible that myriads of these tiny worms could infest the blood, and the parent worms inhabit important regions of the body, without causing some disease, yet up to the present no special symptoms can be attributed to their presence, and the pathology associated with their prevalence in the human body is not even a matter of conjecture. Here, then, is a new field for those engaged in the scientific investigation of tropical diseases.

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In endeavouring to trace out the particular species of mosquito which acts as intermediate host to *Filaria Demarquay*, I met with many different varieties of the genus *Culex*. *Culex Pipiens* is supposed to be the active agent in conveying *Filaria Nocturna* from one individual to another. *Culex Pipiens* is apparently a small, brown, unstriped insect. It is more than probable that another of the *Culex* tribe is the host of *Filaria Demarquay*, but up to the present the exact mosquito remains a matter of doubt and mystery.

Among the mosquitos which I collected was the famous "*Anopheles*," which has been immortalized by Ross's valuable discoveries. This mosquito conveys malarial infection from one human being to another, and has also been proved to be the intermediate host for all the malarial parasites. In appearance *Anopheles* differs from the other varieties in the female insect, having elongated pulpi and spotted wings. Also, the position of *Anopheles* when at rest is characteristic. The body projects outwards almost at right angles from the wall on which they repose, whereas the *Culex* tribe are parallel with it. The larvæ also present some differences—those of *Anopheles* lying flat on the surface of remote sheltered natural puddles or ponds, while those of the genus *Culex* float head downwards, when resting on the surface of the water, and are to be found in tubs, wells, tanks, and artificial collections of water close to houses. The genus *Culex* has been termed the domestic mosquito, and *Anopheles*, rural mosquito. The larvæ of one are to be seen every day, whereas those of the other are most difficult to find. These details are of the greatest importance in connection with the subject of the possible extinction of Malaria by destroying the mosquito grubs with kerosine oil wherever the puddles or breeding pools containing the larvæ are found. According to Major Ross the extirpation of Malaria is feasible on the lines indicated above.

The digression on the subject of Malaria may be excused on account of its importance, and also because the mosquito plays exactly the same part with regard to *Filaria* as it does to Malaria, that is, it acts by transmitting the disease from one person to another.

For diagnostic purposes I found it necessary to use a high power with the microscope. As there was no $\frac{1}{12}$ inch oil immersion lens in the Colony, I was obliged to import one at my own expense.

I have, &c.,

OTHO GALGEY.

The Hon. C. Dennehy,
Colonial Surgeon.

ST. VINCENT.

METEOROLOGICAL RETURN for the YEAR 1899.

Station—Botanic Gardens, St. Vincent.

Long.—61° 15' W. Lat.—13° 10' N. Height above Sea Level—203 feet.

	Temperatures. °				Rainfall.			General direction of winds.	Remarks.
	Dry Bulb.		Wet Bulb.		Maximum Thermometer.	Minimum Thermometer.	Total rainfall for the month.	No. of days on which rain fell.	Date of greatest fall, and No. of inches.
	9 a.m.	3 p.m.	9 a.m.	3 p.m.					
January	Inches.	Days.	5th—1.18
February	6.59	29	20th—1.40
March	8.54	25	17th—1.85
April	5.65	19	1st—1.26
May	3.28	15	23rd—0.62
June	3.45	21	30th—2.22
July	11.17	25	20th—2.02
August	10.04	28	2nd—1.56
September	8.34	30	15th—2.49
October	8.96	22	28th—1.62
November	9.60	23	4th—2.81
December	10.61	27	4th—1.22
	5.74	22	

* Readings taken from thermometer 4 feet above ground in shade.

† Meteorological instruments were destroyed by hurricane.

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1899.

COLONIAL HOSPITAL.

RETURN OF DISEASES AND DEATHS IN 1899 AT THE COLONIAL HOSPITAL.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES—			
Small-pox	—	—	
Measles	—	—	
Typhus	—	—	
Dengue	—	—	
Influenza	12	—	
Diphtheria	—	—	
Febricula	—	—	
Enteric Fever	—	—	
Cholera	—	—	
Dysentery	12	—	
Yellow Fever... ..	—	—	
Malarial Fever—			
(a.) Intermittent... ..	4	—	
(b.) Remittent	2	—	
(c.) Pernicious R.	—	—	
Erysipelas	7	—	
Pyæmia	—	—	
Septicæmia	—	—	

COLONIAL HOSPITAL—*cont.*ST. LUCIA,
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Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES— <i>cont.</i>			
Tetanus	3	1	
Tubercle of Lung	16	11	
Leprosy—			
(a.) Tubercular	—	—	
(b.) Anæsthetic	—	—	
Yaws	2	—	
Cancer	1	—	
Syphilis—			
(a.) Primary	8	—	
(b.) Secondary	4	—	
(c.) Inherited	—	—	
Gonorrhœa	—	—	
Hydrophobia	—	—	
Scurvy	—	—	
Alcoholism	—	—	
Delirium Tremens	—	—	
Rheumatism	31	—	
Rheumatic Fever	—	—	
Gout	—	—	
New Growth, non-malignant	—	—	
„ malignant	—	—	
Anæmia	40	—	
Diabetes	—	—	
Mellitus	—	—	

ST. VINCENT,
1899.COLONIAL HOSPITAL—*cont.*

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES— <i>cont.</i>			
Diabetes insipidus	—	—	
Debility	27	3	
LOCAL DISEASES—			
DISEASES OF THE NERVOUS SYSTEM—			
Sub-section 1.			
Diseases of the Nerves—			
Neuritis	1	—	
Meningitis	—	—	
Myelitis	—	—	
Hydrocephalus	—	—	
Encephalitis	—	—	
Abscess of Brain	—	—	
Congestion of Brain	—	—	
Sub-section 2—			
Functional Nervous Disorders—			
Apoplexy	1	1	
Paralysis	4	—	
Chorea	—	—	
Epilepsy	3	—	
Neuralgia	1	—	
Hysteria	1	—	

COLONIAL HOSPITAL—*cont.*ST. VINCENT,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES— <i>cont.</i>			
Sub-section 3—			
Mental Diseases—	—	—	
Idiocy... ..	—	—	
Mania... ..	—	—	
Melancholia... ..	—	—	
Dementia... ..	2	—	
Delusional Insanity... ..	—	—	
Diseases of the Eye... ..	11	—	
“ “ Ear... ..	2	—	
“ “ Nose... ..	—	—	
“ “ Circulatory System	13	—	
“ “ Digestive System... ..	107	19	
“ “ Lymphatic System	—	—	
“ “ Urinary System... ..	22	2	
“ “ Generative System	25	6	
“ “ Respiratory System	36	—	
“ “ Male Organs... ..	1	—	
“ “ Female Organs... ..	1	—	
“ “ Organs of Locomotion.	8	—	
“ “ Cellular Tissue... ..	140	1	
“ “ Skin... ..	1	—	
Injuries, General... ..	78	3	
“ Local... ..	—	—	
Surgical Operations, Major and Minor.	438	—	

ST. VINCENT,
1899.COLONIAL HOSPITAL—*cont.*

Diseases.	Yearly Total.		Remarks
	Cases.	Deaths.	
LOCAL DISEASES— <i>cont.</i>			
Malformations 	—	—	
Poisons 	1	—	
Parasites 	4	—	
Non-Diseases, Labour Cases ...	34	—	
Total 	1,104	47	

No. 18.

SELANGOR.

ANNUAL MEDICAL REPORT, 1899.

I have the honour to report on the work done by the Medical Department, Selangor, during the year 1899.

2. The total number of cases treated in all hospitals, with death-rate, as compared to the previous year, was as follows :—

Year.	Admitted.	Total treated.	Total deaths in hospital.	Death-rate.
1898	11,694	12,705	1,708	13.44
1899	11,402	12,371	1,437	11.61

3. The number of cases treated in the hospitals show a slight decrease as compared to the year 1898.

The general death-rate of 11.61 per cent. is the lowest reported for the last thirteen years.

4. The total of 1,437 deaths includes all deaths in all hospitals. The number of deaths occurring within 48 hours of admission to hospital was 275. These cases were admitted to hospital in a practically moribund condition, and were necessarily in a state beyond all possibility of cure. When these are deducted from the total number of deaths, the hospital death-rate is shown as 9.39 per cent., which, I think, may be considered satisfactory.

POPULATION, BIRTHS AND DEATHS.

5. The population of the State is practically unknown. The census of 1891 gave the total as 81,592, but the registration of births and deaths has only been carried out since 1st July, 1892. The total number of births registered was 1,643, against 1,582 in 1898, and the total number of deaths 4,958, as against 4,893 in 1898. The number of births and deaths registered has, therefore, slightly increased.

6. It is interesting to note that the Malays, who are practically the only settled population of the State, show a total number of 1,220 births, with 1,145 deaths. The births, therefore, exceed

SELANGOR, 1899. the deaths by 75. This is satisfactory, more especially when it is considered that Javanese and Boyanese coolies are included in the total number of Malays. These immigrants are in most cases unaccompanied by their women, so that, while adding to the death-rate, they have no opportunity of adding to the birth-rate.

7. According to the census of 1891 there are only 23,750 Malays in Selangor, as against 96,719 in Perak. As very few Malays avail themselves of European medical treatment, the difference in the size of the Malay population of the two States should not be lost sight of in considering the equipment of, and expenditure on, the medical departments of the respective States.

PREVALENCE OF SICKNESS AT DIFFERENT SEASONS, &C.

8. The temperature of the air varies so slightly during the year that no appreciable effect of change of temperature on the health of the inhabitants of the State can be noted.

9. The following table shows the monthly total of cases of fever, dysentery, and diarrhoea, admitted to the Kuala Lumpur Hospitals during the years 1898 and 1899, the rainfall for each month being also shown :—

Month.	Fever.		Dysentery.		Diarrhoea.		Rainfall.	
	1898.	1899.	1898.	1899.	1898.	1899.	1898.	1899.
January ...	98	54	15	10	76	27	Inches. 6·62	Inches. 7·87
February ...	77	59	21	17	32	21	6·72	5·97
March ...	96	43	24	8	30	17	10·31	8·05
April ...	102	66	24	9	31	20	16·49	7·25
May... ..	79	69	26	17	25	12	6·30	13·83
June ...	67	75	30	29	35	18	6·30	5·38
July ...	75	101	16	19	20	28	6·35	2·31
August ...	68	92	18	23	38	23	8·11	2·58
September ...	62	111	18	28	37	12	12·26	12·38
October ...	72	67	14	13	43	24	9·53	8·44
November ...	55	88	19	25	37	32	12·35	7·27
December ...	54	113	12	23	27	39	4·94	10·12
Total ...	905	938	237	221	431	273	106·28	91·45

It will be seen that with a reduced fall of rain in 1899, there has been practically the same amount of fever and dysentery as in 1898, while the number of cases of diarrhoea has diminished to a great extent. This may be caused by a more universal use of the pipe water supply as against well water.

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PREVAILING DISEASES.

10. The following return shows the diseases causing the largest number of admissions to hospital during the years 1898 and 1899 :—

Disease.	Number treated.		Number of deaths.		Death-rate.	
	1898.	1899.	1898.	1899.	1898.	1899.
Beri-beri ...	1,870	1,837	244	333	13·00	18·01
Skin disease ...	1,747	1,102	41	6	2·03	0·05
Malarial fever ...	2,070	1,872	151	55	7·02	2·09
Diarrhoea ...	873	661	407	207	46·06	31·03
Dysentery ...	781	659	300	188	32·04	28·05
Venereal disease ...	752	946	8	18	1·06	1·09

Beri-beri.

11. The number of cases of this disease admitted to hospital decreased slightly during the year. An exceptionally large number of acute cases were, however, admitted, showing great resistance to treatment, and in most cases terminating fatally by the so-called pneumo-gastric crisis. The number of deaths caused by this disease increased from 244 in 1898 to 333 in 1899, the percentage of deaths being 18·12. It is difficult to account for this increase in mortality, more especially as the high rate of wages consequent on the rise in the price of tin has enabled the coolies to live thoroughly well. There is little doubt, however, that, unlike most tropical diseases, bodily nourishment has little or nothing to do with either the susceptibility to beri-beri infection, or with the severity of the attack. Thus, in the Pudohe Gaol, where the prisoners are extremely liberally dieted, and where they lead regular and healthy lives, 152 cases of beri-beri occurred, with a death-rate of 20·39 per cent. in 1895, and 297 cases with a death-rate of 18·51 per cent. in 1897.

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12. The susceptibility to infection, as well as the severity of the attack in this disease, appears to be directly influenced by the duration of exposure to the causative influence. Thus, it was suggested in 1898 that the majority of the prisoners should be sent away from the gaol during the day to do extra-mural work, so that they practically only slept in the gaol. At the same time all earthwork in or around the gaol was put a stop to. The result was extraordinary, for the health of the prisoners improved at once, and during the year 1898 only 68 cases of beri-beri occurred, with a death-rate of 2·94 per cent. In 1899, 81 cases occurred with a death-rate of 8·64 per cent.

13. The death-rate from beri-beri in the mining district of Ulu Selangor has been very high during the year. This is probably due to local infection in certain mines during removal of overburden.

14. The death-rate from this disease at the District Hospital, Kuala Lumpur, was 21·11 per cent., as against 15·29 per cent. in 1898.

Skin Disease.

15. A very large number of cases of ulcer of the leg, a very common disease among mining coolies, are included under this heading. These ulcers are often very extensive, and of a foul sloughing description; they, as a rule, improve rapidly under treatment, but unless completely healed are very apt to break down again directly the patient returns to work. Only six deaths occurred from skin diseases, as against 41 in 1898. This very marked improvement may be attributed to the general prosperity and improvement in condition of the mining classes.

Malarial Fevers.

16. The number of deaths caused by diseases of a malarial type was 55, as against 151 in 1898. The percentage of deaths to total number of cases treated was 2·93 only, which cannot be considered high. The prevalence of malarial fever cannot, however, be gauged by the death-rate from this disease, or from the number of cases admitted to hospital. During the last two years the coast districts have been visited by severe outbreaks of malarial fever. All nationalities have been affected by it, and Government clerks, Tamils and Chinese coolies, and Malay settlers have been equally attacked. The fever is of an ordinary intermittent type, and yields readily to treatment by rather large doses of quinine. Admission to hospital rarely becomes necessary; but, if neglected, the fever leads to a cachexic condition which is extremely difficult to cure.

17. As the consumption of quinine may be taken as a guide to the prevalence of malarial affections, it is of interest to note that 2,088 ounces of quinine were expended in 1899, as against 1,249 ounces in 1897.

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18. It is difficult to assign a cause for this outbreak of malarial fever. It was thought, at one time, that the earthwork in connection with road-making, granite quarrying and spreading, might account for the increase of fever at Jugra, in the Kuala Langat district; but it has been found to be equally prevalent on the sea-beach, in the Jeram and Kuala Selangor districts, among Chinese fishermen, where no roadwork or quarrying operations have been undertaken.

19. The coast districts of Selangor from the year 1890 to 1897 were extremely healthy, and malarial fever was a comparatively rare disease; it is now a very definite source of discomfort and danger to the inhabitants, and I trust that the attention of the Director of the Pathological Institute of the Federated States may be especially drawn to the very great value of careful investigation into the conditions under which it has developed.

20. I am informed, by a previous resident of Selangor, that many years ago a similar epidemic of malarial fever attacked the inhabitants of the Kuala Selangor district. I am, however, unable to procure any definite or detailed information on the subject.

Dysentery and Diarrhœa.

21. Both the number of cases coming under treatment and the hospital death-rate from these diseases have shown a very satisfactory decrease. Only 207 deaths were caused by diarrhœa, as against 407 in 1898, and the deaths from dysentery have also fallen from 300 in 1898 to 188 in 1899. This improvement may, I think, be almost entirely attributed to the thoroughly well-nourished condition of the majority of the mining coolies, and the employment of a very large number of weakly vagrants who formerly wandered about the street living an extremely irregular life and often half-starving. It can be readily understood how rapidly the feeble constitution of these men gave way to any form of bowel complaint, and how futile all attempts at treatment became.

Venereal Disease.

22. I regret to report a considerable increase both in the number of venereal cases treated and in the number of deaths from this disease. During the year 1899, 18 persons died in hospital from venereal disease, as against eight in 1898.

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23. Dr. Lucy, surgeon in charge of the district hospital, Kuala Lumpur, at which institution the greater number of venereal cases were treated, reports that 534 cases of venereal disease were admitted, against 313 in the year 1898. Of these 313 were cases of syphilis, often of a severe type, and resulting in 10 deaths. This officer points out that these figures do not fully demonstrate the extent of venereal disease amongst the coolie population, as large numbers are treated as out-patients, or by Chinese doctors. It is probable that more coolies in the Kuala Lumpur district have been incapacitated by venereal disorders than from any other disease, beri-beri included.

24. It is almost impossible to insist on Chinese coolies undergoing a regular course of treatment for syphilis; they cannot be kept in hospital, and directly their immediate symptoms disappear they stop all treatment, with a result that the disease reappears, causing a terrible amount of suffering. The Chinese doctors usually treat syphilis with very large doses of some form of mercury, resulting often in profuse salivation and general mercurial poisoning.

25. I agree with Dr. Lucy, who remarks in his report that "The gravity of this state of affairs is apparent, and the responsibility of neglecting measures which would certainly, to an appreciable extent, stop the spread of the more severe forms of this disease, is no light one."

26. The women's ward at the General Hospital has been under my personal charge during the past 10 months, and I can testify to the horrible condition of disease in which a very large number of Chinese women are admitted to hospital. It should be remembered also that these women are only a few out of a very great number of sick, the majority of whom either conceal their disease or are treated by persons of their own nationality.

Infectious Diseases.

27. Only eight cases of small-pox occurred during the year. One, a Chinese boy, arrived on board ship from Singapore with the disease, and was transferred to the infectious disease hospital at Klang, where he recovered. The other seven cases were treated at the district hospital, Kuala Lumpur, and made good recoveries.

OUT-PATIENTS.

28. During the year 36,515 visits were paid by out-patients, as against 34,594 during the previous year. This work increases gradually, and the Malays are now beginning to appreciate this form of relief.

GENERAL SANITARY CONDITION OF THE STATE.

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29. I consider the State a very healthy one, and the general sanitary condition good. It is true that the Chinese in the mining districts and agricultural holdings have no method of drainage, and that their surroundings are almost invariably dirty; the houses occupied by them are, however, so thoroughly ventilated that it is very seldom that any disease attributable to unhealthy surroundings occurs.

THE SANITARY CONDITION OF THE CHIEF TOWNS.

30. Each town of any size in the State is under the care of a Sanitary Board, consisting usually of the local magistrate, engineer, medical officer, and one or two non-officials, both European and Native. The towns are mostly well drained and regularly scavenged and cleansed. The markets and slaughter houses are under the care of an inspector whose duty it is to inspect the food supply. Prosecutions for selling meat and fish unfit for food, and for adulteration of milk, used to be rather frequent, but recently have not been found necessary.

31. The collection of night-soil by the Sanitary Board at Kuala Lumpur is now regularly carried out, and has, so far, proved a satisfactory way of disposing of the night-soil, which is buried in trenches about $1\frac{1}{2}$ miles from the town.

32. With the exception of part of the house drains, nearly all the drainage in the towns is entirely open and the whole system is constantly flushed with rain water.

WATER SUPPLY.

33. The reservoir water supply at Kuala Lumpur is now greatly appreciated by the Chinese, and the number of houses fitted with stand-pipes is rapidly increasing. A large number of the house wells have now been filled in.

The water supply in other parts of the State is mainly derived from wells or hill streams, and is, as a rule, pure and good.

OVERCROWDING.

34. No cases of overcrowding have been discovered during the year.

VACCINATION.

35. One thousand six hundred and eighty persons were vaccinated during the year, as against 2,075 in 1898. The percentage of success, excluding those cases which were not inspected after vaccination, was 87.1.

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36. I consider that the people of all nationalities are very fairly protected from small-pox by vaccination. There is not the slightest difficulty in persuading parents to have their children vaccinated, and they will come from very long distances for this purpose; it is, however, extremely difficult to make them understand the necessity of re-vaccination of adults. Selangor is now very free from small-pox, and the natives thoroughly appreciate the protection given them by vaccination. It is noteworthy that whereas about one out of every four adult Malays is marked with small-pox, it is difficult to find a child under 12 years old showing any marks of the disease.

GENERAL.

37. I should like to again draw the attention of Government to the advisability of granting more frequent home leave to European officers. There is no doubt but that in the interest of the Government, as well as of the individual officer, a thorough change of climate and rest from work should be obtained once in four years. The unanimous proposal of the members of the Medical Congress of the Federated States, held in December, 1898, was to the effect that eight months' leave should be granted every four years, and also that the period for optional retirement from the service should be reduced to 50 years instead of 55 as at present.

38. The following returns accompany this report:—

(i.) *Nosological Return*.—As pointed out in my report for 1898, this return is only approximately correct. There are still three hospitals in the State under the care of dressers with no systematic training in medicine or surgery, and it is a matter of impossibility for them to diagnose cases according to a scientific classification. I am of opinion that all hospitals, however small, should be under the care of a qualified apothecary.

(ii.) *Meteorological Return*.

(iii.) *Statistics of Population*.—I have been again obliged to omit as entirely unreliable. I believe that a census is to be taken in the year 1901, and until this is carried out no trustworthy returns of population can be provided.

E. A. O. TRAVERS,

State Surgeon.

METEOROLOGICAL RETURN FOR THE YEAR 1899.

	Temperature.				Rainfall.			Winds.		Remarks.
	Solar Maximum.	Minimum on Grass.	Shade Maximum.	Shade Minimum.	Range.	Mean.	Amount in Inches.	Degree of Humidity.	General Direction.	Average Force.
January	144.0	117.0	88.9	72.0	16.8	80.4	7.87	83	Calm	No record.
February	152.9	119.8	89.8	71.3	18.4	80.5	5.97	79	N.E.	
March	152.3	120.7	89.6	71.8	17.8	80.7	8.05	80	S.W.	
April	150.5	121.7	90.0	71.9	18.1	80.9	7.25	79	Calm	
May	152.0	123.0	90.4	71.1	19.3	80.7	13.83	83	"	
June	151.2	123.1	90.4	70.8	19.6	80.6	5.38	81	"	
July	151.9	121.7	90.6	70.6	20.6	80.6	2.31	74	"	
August	146.1	117.5	90.1	71.2	18.9	80.7	2.58	76	"	
September	149.0	119.8	90.5	70.4	20.1	80.4	12.38	79	"	
October	148.4	118.7	90.1	70.9	19.1	80.5	8.44	78	"	
November	149.1	117.4	89.3	70.5	18.8	79.9	7.27	79	S.E.	
December	143.6	119.6	89.2	70.8	18.4	80.0	10.12	80	"	
Mean	149.2	120.0	89.9	71.1	18.8	80.5	—	79	Calm	
Total rainfall 91.45 inches.										

SELANGOR,
1899.

RETURN of DISEASES and DEATHS in 1899 at all
HOSPITALS in SELANGOR.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES—			
Small-pox	8	—	
Measles	2	—	
Chicken-pox	3	—	
Dengue	—	—	
Influenza	20	—	
Mumps	8	—	
Febricula	—	—	
Enteric Fever	15	7	
Typho, Malarial	18	18	
Dysentery	659	187	
Beri-Beri	1,837	333	
Malarial Fever—			
(a.) Intermittent... ..	1,737	5	
(b.) Remittent	112	48	
(c.) Pernicious R... ..	23	2	
(d.) Cachexia	448	81	
Erysipelas	14	3	

*Hospitals in Selangor—cont.*SELANGOR
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES— <i>cont.</i>			
Phagedœna	14	3	
Pyæmia	2	1	
Septicæmia	1	1	
Tetanus	—	—	
Tubercle	39	5	
Leprosy	261	50	
(a.) Tubercular	—	—	
(b.) Anæsthetic	3	—	
Yaws	1	—	
Syphilis—			
(a.) Primary	240	—	
(b.) Secondary	277	7	
(c.) Inherited, Tertiary	195	11	
Gonorrhœa	244	—	
Hydrophobia	1	1	
Scurvy	—	—	
Alcoholism	7	—	
Delirium Tremens	1	—	
Rheumatism	864	5	
Rheumatic Fever	1	—	
Gout	—	—	
New Growth, non-malignant	14	—	
,, malignant	12	3	
Rickets	1	—	
Anæmia	227	29	

SELANGOR,
1899.

Hospitals in Selangor—cont.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES— <i>cont.</i>			
Purpura	1	1	
Diabetes mellitus	3	—	
Debility	126	30	
Premature birth	1	—	
Old Age	15	5	
LOCAL DISEASES—			
DISEASES OF THE NERVOUS SYSTEM—			
Sub-section 1—			
Diseases of the Nerves—			
Neuritis	12	—	
Meningitis, Spinal	2	—	
Meningitis	2	1	
Hydrocephalus	—	—	
Encephalitis	—	—	
Abscess of Brain	1	1	
Hæmorrhage, Brain	1	—	
Sub-section 2—			
Functional Nervous Disorders—			
Paralysis	25	3	
Paraplegia	7	3	
Hemiplegia	91	13	
Convulsions	2	1	
Epilepsy	6	2	
Headache	19	—	

*Hospitals in Selangor—cont.*SELANGOR,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES— <i>cont.</i>			
Diseases of the Nervous System— <i>cont.</i>			
Sub-section 2— <i>cont.</i>			
Functional Nervous Disorders— <i>cont.</i>			
Neuralgia	20	—	
Hiccough	2	—	
Hysteria	1	1	
Dumbness	1	—	
Neurasthenia	2	—	
Sub-section 3—			
Mental Diseases—			
Idiocy	12	3	
Mania	29	13	
Melancholia	51	19	
„ Chronic	6	1	
Dementia	18	6	
„ Chronic... ..	4	—	
Temporary Insanity... ..	1	—	
Mania Acute and others	18	2	
Diseases of the Eye	178	9	
„ „ Ear	11	—	
„ „ Nose	2	—	
„ „ Circulatory System	44	19	
„ „ Respiratory System	566	142	
„ „ Digestive System ...	1,062	263	
„ „ Lymphatic System	119	1	

SELANGOR,
1899

Hospitals in Selangor—cont.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES— <i>cont.</i>			
Diseases of the Urinary System ...	147	30	
" " Generative System—			
" " Male Organs ...	78	—	
" " Female Organs ...	14	1	
" " Organs of Locomotion.	90	7	
" " Cellular Tissue ...	513	29	
" " Skin... 	1,102	6	
Injuries, General 	42	7	
" Local... 	562	21	
Surgical Operations 	386	9	
Malformations 	11	1	
Poisons 	10	1	
Parasites... 	12	1	
Malingering 	3	—	
No discoverable diseases 	15	—	
Under observation 	71	8	
Total 	12,823	1,460	

ANNUAL REPORT OF BIRTHS AND DEATHS. 1899.

SELANGOR,
1899.

I have the honour to forward returns* of Births and Deaths registered in Selangor during the year 1899.

BIRTHS.

2. The total number of births was 1,643 with a rate of 20·136 per mille, against 1,582 and 19·389 per mille in 1898. This slight increase was general among all nationalities with the exception of Europeans, among whom only seven births were recorded, as against 13 in 1898.

3. It is peculiar that among those of Eurasian and Indian nationality the proportion of boys born greatly exceeds that of girls, whereas among the Chinese and Malays the sexes are more equally divided.

4. A total of 848 boys and 795 girls were born during the year.

DEATHS.

5. As will be seen from the following figures the death-rate has slightly increased :—

—		1898.	1899.
Number of deaths		4,893	4,858
Death-rate per mille		59·969	60·765

6. The increase in the number of deaths is most noticeable among the Malays and those under the heading of "Other nationalities."

7. A very large number of Malay deaths occurred in Kuala Selangor, where 219 deaths were registered, as against 130 in the previous year. It is probable that a large number of these deaths were due to neglected malarial fever, which has been very rife in the coast districts. The deaths among Malays in Kuala Lumpur increased from 216 in 1898 to 284 in 1899.

8. Of other nationalities there were 94 deaths, as against 44 in 1898.

9. The Chinese deaths show a considerable reduction in number; this may be accounted for to a great extent by the

* Returns not printed.

SELANGOR, small number of sinkhehs employed in the mines. The death-
1899 rate among sinkheh labourers is usually very high.

10. In spite of the increase in the number of deaths among the Malays, the number of births exceeds the deaths by 65. This is very satisfactory, when it is considered that all Javanese and Boyanese immigrants are returned as Malays, almost all of whom are of the male sex.

11. The difference in the numbers of the sexes in other nationalities is too great for any record to be of value as indicating the general health and prosperity of the State.

E. A. O. TRAVERS,

Registrar of Births and Deaths.

METEOROLOGICAL REPORT, 1899.

I have the honour to report on the meteorological observations taken in Selangor during the year 1899.

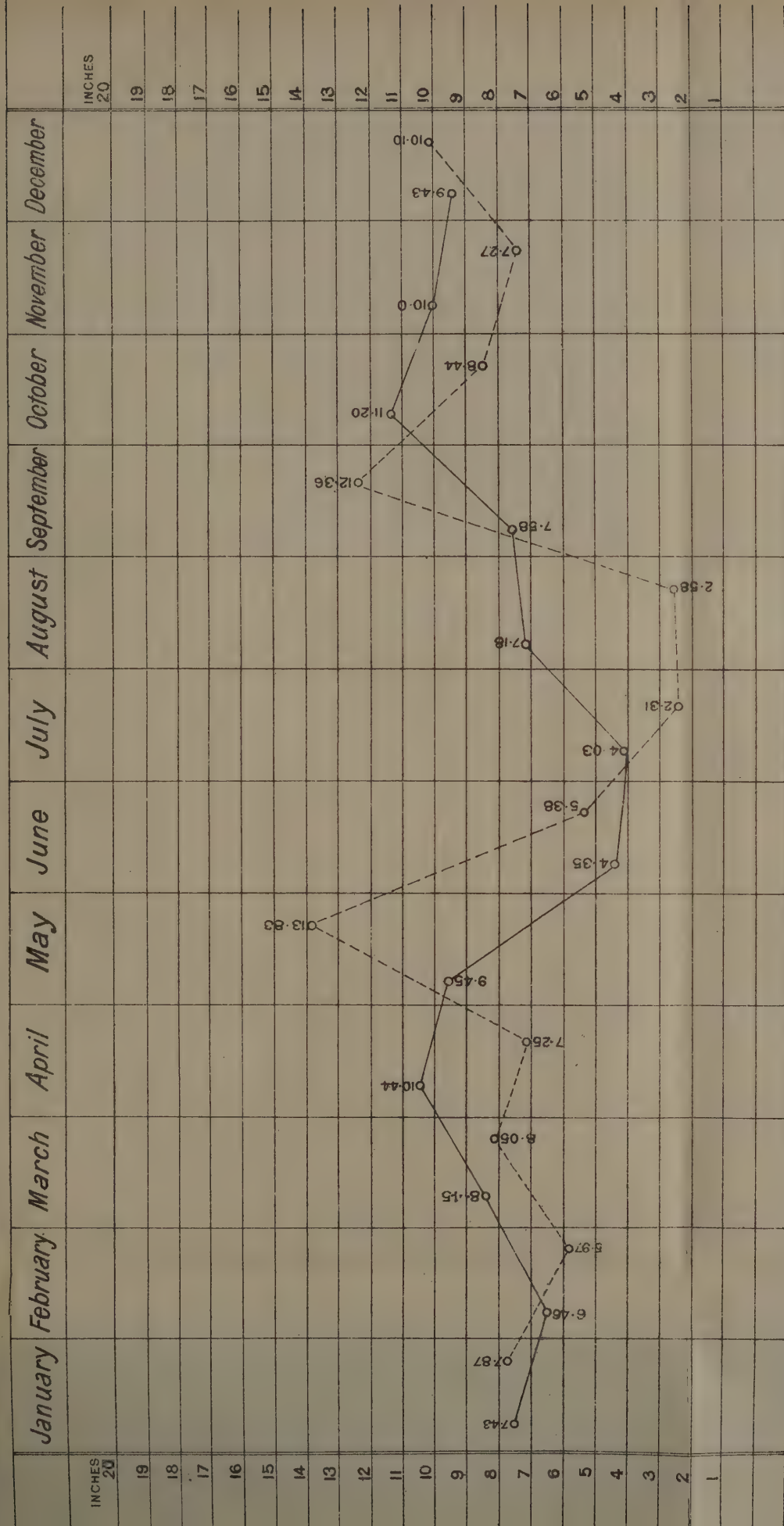
2. The following returns* accompany this report :—

- (1) Abstract of thermometrical and rainfall observations taken at six stations.
- (2) Abstract of meteorological observations taken at Kuala Lumpur.
- (3) Chart of rainfall taken at Kuala Lumpur during the last 21 years.
- (4) Abstract of rainfall registered in different parts of the State in 1899.
- (5) Chart showing mean annual range of temperature.
- (6) Chart showing mean annual range of barometer.
- (7) Comparative table showing observations taken in 1898 and 1899.
- (8) Table showing monthly rainfall at Kuala Lumpur during the last 21 years.

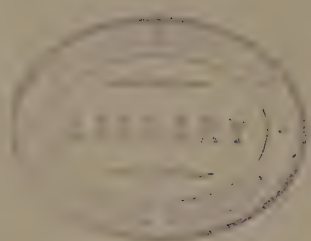
3. The highest reading of the barometer taken during the year was 29·999 inches on 8th December at 9 p.m., and the lowest 29·703 on 29th November at 9 p.m.

* Return (3) only is reprinted.

ABSTRACT OF LAST 21 YEARS' READINGS OF RAINFALL TAKEN MONTHLY.



NOTE.— Abstract of 21 Years Readings marked in plain line and Rainfall of 1899 in dotted line.



4. The mean average temperature in Kuala Lumpur for the year was $80\cdot5^{\circ}$, exactly the same as in 1898. SELANGOR,
1899.

5. The highest temperature in the shade at Kuala Lumpur was 96° F., as against 98° F. The lowest recorded temperature was 67° , the same as during the previous year.

6. The rainfall was $91\cdot45$ inches only, which is very much the lowest fall we have had for the last five years. Reference to the chart will show that the monthly fall differed in many respects from the abstract for the last 21 years. May was a much wetter month than usual, $13\cdot83$ inches having been registered, as against an average of $9\cdot45$ inches. June and July were, as usual, dry months. August was exceptionally dry, only $2\cdot58$ inches being registered, the average being $7\cdot18$. September was exceptionally wet and $12\cdot38$ inches of rain were registered, the average being $7\cdot58$ inches. Both October and November were very much dryer than usual, but the December rain was about average. The greatest fall of rain in any one day was $6\cdot62$ inches registered at Klang on 19th November. The rainfall at Kuala Langat is reported as $152\cdot46$ inches. There is some doubt, however, as to the correctness of this return, so I have omitted it.

E. A. O. TRAVERS.

State Surgeon.

SEYCHELLES,
1899.

No. 19.

SEYCHELLES.

ANNUAL REPORT OF THE CHIEF GOVERNMENT MEDICAL OFFICER OF SEYCHELLES FOR THE YEAR 1899.

(Extract.)

Seychelles,

March 2nd, 1900.

I.—VITAL STATISTICS.

(a.) With regard to the vital statistics, I annex in a tabulated form, the statistics* of the estimated population at the end of 1898 and 1899, together with the arrivals and departures, births and deaths, so as to be able to compare the two years with one another.

(b.) In 1898, 320 coolies were imported by Government for work on the roads; this increased the number of arrivals, and made an artificial advance in the total population for that year. This has been partly balanced by the return of 275 of these coolies to India during 1899, and this accounts for the small estimated increase at the end of the year 1899.

(c.) The increase would have been much more apparent but for this, as the births in 1899 exceeded those in 1898 by 39, and the deaths in 1899 were fewer by 86 than those in 1898; this would make a total increase of the resident population of 400, instead of 103 given in the table.

(d.) The birth-rate for 1899 is 32·28, against 30·50 for 1898, and the death-rate only 14·00, against 18·47 of the previous year.

(e.) This year was a comparatively dry one and the temperature was low.

* *Vide* Appendix A.

On examining the deaths the following numbers are **SEYCHELLES,**
interesting :— **1899.**

	1898.	1899.
Under 5 years old ...	140	121
Over 5 and under 70 ...	182	121
Over 70	39	33
Total	361	275

(f.) The percentage of deaths under five years is considerably in excess of the deaths at more advanced ages.

(g.) This mortality amongst children is due to the ignorance of the parents more than anything else, and to the fact that medical advice in the country districts has been up to now difficult to obtain, and I have known cases in which children and grown-up people have been brought into town at the last moment, only to die in the doctor's consulting room, and sometimes even before they arrived there, or on their way home.

(h.) The appointment of a medical officer to the southern districts of Mahé will, I hope, have the effect of preventing this to a great extent. He arrived at his post in October, 1899, and has already, by attending to some serious accidents, been able to prevent a good deal of unnecessary suffering, and probably in one or two cases, to save the lives of persons who might otherwise have died.

II.—PREVALENCE OF SICKNESS IN THE DIFFERENT SEASONS OF THE YEAR, AND THE EFFECT OF THE METEOROLOGICAL CONDITIONS WITH REGARD TO SICKNESS.

(a.) The temperature is equable, with a mean for 1898 of 79.40° , and 78.84° for 1899, the maxima for the two years being 82.9° and 80.9° , and the minima 77.4° and 77.3° respectively.

(b.) These observations are taken by the Port Officer, the instruments being kept in the Port Office, in a room situated about 20 feet above the sea level.

(c.) The south-east trade-wind blows from the beginning of May until the end of September, but during the year 1899 it began in April, and blew with slight interruption until the end of October; this accounts for the low mean temperature for that year.

SEYCHELLES
1899.

(d.) The period during which the south-east trade-wind blows is said to be the most healthy one, and the statistics for the year 1898 and 1899 seem to bear this out. It is also noticeable that the months during which the trade-wind does not blow are the months in which most of the rain falls, and that it is during those months that most of the deaths occur.

(e.) As to the causes of death, I have noticed that, amongst children at least, dysentery is most common, either when the streams are low, and the infusion of vegetable matter in the streams is very concentrated, or after rain, when the river beds are stirred up, and this vegetable refuse is being washed down to the sea.

After a few days' rain, when the rivers, though turbid, are clean of vegetable matter, the cases of dysentery diminish, and do not increase to any extent until the rivers have fallen and have had time to fill up with leaves and sticks and other vegetable refuse, which, by its decomposition in the non-stagnant or semi-stagnant pools, renders the water dangerous for drinking purposes.

(f.) As I have only the statistics of two years on which to base these observations, these remarks may be rather premature, but I think that they will in the main prove correct, as I have been for six years in the Colony, and the figures, which I am now able to quote for the first time only, confirm a suspicion I had formed whilst I was carrying on a private practice in Mahé.

(g.) With regard to malarial fever, I have sought for a true case ever since I have been in Seychelles, and with the exception of cases imported from other countries, I have never seen one.

(h.) As to the causes of death a list supplied from the Civil Status Office would be misleading, seeing that very few of the persons who died have ever been seen by a medical man, and in still fewer cases have certificates of the cause of death been given by medical practitioners, most of the declarations having been made by the friends of the deceased, and their diagnoses are not to be depended upon, as they are either ignorant Africans or Creoles who have had very slight general education, or none in matters connected with medicine.

III.—GENERAL PLAN OF THE TOWN.

(a.) The main streets of the town are fairly wide, and sufficient land was left between each of them to allow of gardens round each house, and if the original idea had been carried out there would have been not much cause to complain. Owing, however, to the scarcity of building land, these gardens have gradually become small colonies, crowded with little poky huts, and along the road front of each plot, shops of one story have been allowed to be built with their fronts opening on the roadway, not

even leaving a foot-path. The result has been that the centre of the town, especially near the market, has become very much overcrowded. To make matters worse, each of these small shops is let to a different person, usually an Indian or Asiatic, and it not only serves as a shop, but as a kitchen, living and sleeping room, the owner and his assistants living and sleeping amongst the goods and provisions he offers for sale to his customers.

SEYCHELLES,
1899.

V.—EPIDEMICS WHICH HAVE OCCURRED DURING THE YEAR.

(a.) The commencement of the year was marked by a slight epidemic of influenza, which soon passed off and left no ill-effects behind it. Chicken-pox, as usual, was present to a certain extent, in fact, the Colony never seems to be absolutely free from it.

(b.) A few cases of suspected small-pox were reported from North-west Bay. The disease was confined to the persons in which it first broke out and was of a very mild type.

(c.) A severe epidemic of mumps appeared in the month of May. The first cases to occur appeared in the school attached to the convent. The disease was probably imported from East Africa.

The first part of the population to suffer were the young girls, the disease then attacked the men, and when these had nearly all been attacked, it turned its attention to the boys, and, finally, the women. The four epochs were well marked; the reason of this is not evident. Nearly the whole Creole population was attacked; the Europeans (with the exception of one family, the children of which attended the convent school) escaped.

There were many relapses, and the number of cases in which the other glands, sometimes attacked by the disease in epidemics elsewhere, were implicated, was remarkable.

VII.—GENERAL OBSERVATIONS.

(a.) I append a chart* showing the mean temperature, rainfall, and number of deaths for each month during the two years.

(b.) The death-line, in black, shows that more persons die during the hot weather and in the rainy season.

(c.) The temperature line, in red, points to April as the hottest month.

* *Vide* Appendix B. Not printed.

SEYCHELLES, (d.) The rainfall line, in blue, indicates that more rain falls
1899. in January than in any other month of the year.

(e.) The rainfall in February, 1899, was phenomenally small, in fact, the whole year was cooler and drier than 1898, and the death-rate was certainly lower; whether this is mere coincidence or not I am unable to state, as I am not in possession of sufficiently full information to give a decided opinion on the question, and I do not consider that the statistics for the two years give me sufficient grounds on which to base any theory on the matter.

APPENDIX A.

SEYCHELLES,
1899.

—	Estimated Population.					
	31st December, 1898.			31st December, 1899.		
	Males.	Females.	Total.	Males.	Females.	Total.
Deaths ...	9,400	9,239	18,639	10,098	9,437	19,535
	182	179	361	157	118	275
Departures*	9,218	9,060	18,278	9,941	9,319	19,260
	—	—	—	414	73	487
Births ...	9,218	9,060	18,278	9,527	9,246	18,773
	286	310	596	338	297	635
Arrivals ...	9,504	9,370	18,874	9,865	9,543	19,408
	594	67	661	170	60	230
Total ...	10,098	9,437	19,535	10,035	9,603	19,638

* The number of departures during the year 1898 has been deducted from the number of arrivals, and the resulting figures are given under arrivals for that year.

1898.				1899.			
Per 1,000.				Per 1,000.			
Birth rate ...	...	30.50		Birth rate ...	...	32.280	
Death rate ...	...	18.47		Death rate ...	...	14.003	
Deaths—				Deaths—			
Under 5 years ...	...	140		Under 5 years ...	...	121	
Under 70 years ...	...	182		Under 70 years ...	...	121	
Over 70 years ...	...	39		Over 70 years ...	...	33	
Total ...	...	361		Total ...	...	275	

SEYCHELLES
1899.

APPENDIX C.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES—			
Syphilis	18	1	
Anæmia	8	2	
Debility (old age)	3	—	
Gonorrhœa	11	—	
Abscess	4	—	
Rheumatism	20	—	
Whitlow	2	—	
Headache	2	—	
Mumps	1	—	
Malarial Fever, Imported	2	—	
Varicella	3	—	
Influenza	1	—	
Dysentery	13	—	
Diarrhœa	3	—	
Nervous System—			
Paralysis	3	—	
Neuralgia	2	—	
Idiocy	4	—	
Chorea	2	—	
Diseases of the Eye—			
Ophthalmia	2	—	
Cataract	1	—	

SEYCHELLES,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES— <i>cont.</i>			
Circulation System—			
Heart disease	2	1	
Aortic Aneurism	1	—	
Pericarditis	1	—	
Diseases of the Lungs—			
Phthisis	1	—	
Pleurisy	1	—	
Empyœma	1	—	
Bronchitis	16	—	
Asthma	2	—	
Pneumonia	1	—	
Urinary System—			
Fistula	5	—	
Stricture	6	—	
Oesclitis	7	—	
Digestive System—			
Congestion of liver	5	1	
Constipation	3	—	
Colic	1	—	
Dyspepsia	2	—	
Generation Organs—			
Hydrocele	4	—	
Orchitis	4	—	
Ovarian tumour	1	—	
Displaced uterus	1	—	

SEYCHELLES,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES— <i>cont.</i>			
Generation Organs— <i>cont.</i>			
Neuritis	1	—	
Caseula tumour	1	—	
Pulmonary Embolism after confinement.	1	1	
Parasites—			
Worms	5	—	
Itch	5	—	
Ulcers	5	—	
Injuries	43	—	
Burns	8	1	
Periostitis	2	—	
Fractures	25	1	
Hernia	1	—	
Tonsilitis	5	—	
Stomatitis	1	—	
Grand Total	273	8	

ROBERT DENMAN,
Chief Government Medical Officer.

ANNUAL REPORT FOR PRASLIN AND LA DIGUE, &c., FOR 1899.

SEYCHELLES,
1899.

(Extract.)

MEDICAL.

The Ward of Praslin is composed of the following islands:—

1st. The Island of Praslin—the largest of the group—belonging to many proprietors and to Government.

2nd. The Island of La Digue—next in size, but a very important island, and one which perhaps later on shall become even more important than the Island of Praslin as to revenues and inhabitants—belonging to many proprietors and to Government.

3rd. Frigate Island, belonging to Captain Swayne, of Mahé.

4th. Marianne Island, belonging to Mr. Choppy, of La Digue.

5th. Félicité Island, belonging to Government, rented by Messrs. Harold Baty, &c., of Mahé.

6th. Sisters Islands, belonging to the Berlouis family.

7th. Round Island, belonging to Government, rented by Mr. Aimée Jumeau, of La Digue.

8th. Curieuse Island, belonging to Government, used as asylum for the lepers and paupers.

9th. Aride Island, belonging to Mr. Wd. François Adam, of Praslin.

10th. Cousin Island, belonging to Mr. Gerard Robert, of Praslin.

11th. Cousine Island, belonging to Mr. Jean Baptiste Adam, of Praslin.

Population as to Census of 1891:—

Praslin General Population.

Male	...	...	...	...	601
Female	...	...	...	...	563
Total	...	...	...	...	1,164

African Population.

Male	47	} Total (of) 72.
Female	25	

Total population of Praslin... 1,236

La Digue General Population.

Male	...	...	...	...	396
Female	...	...	...	...	396
Total	...	...	...	...	792

SEYCHELLES,

1899.

African Population.

Male	46	} Total (of) 74.
Female	28	

Total population of La Digue ... 866

I am sure that at present the above is not the exact population of Praslin and La Digue, and beg to suggest that another census be made.

The sanitary condition of these islands is good. The want of a proper supply of proper food is, in my opinion, the cause of all the evils here—as far as diseases are concerned.

The want of proper food is the cause that we may say almost all the inhabitants of these islands suffers more or less from anæmia, and this state of anæmia lowers so much the vital power of their body that their body becomes a proper nidus for the germs of other diseases.

So anæmia is the most important disease—the disease, we may say, that a medical man has specially to deal with here in these islands.

The inhabitants of these islands live mostly on rice, manioc, sweet potatoes, fruit a pins, bananas cooked in different ways, and this is eaten with their rice or manioc, or sweet potatoes, or fruit a pins; also with their rice or manioc, fresh or salted fish. They eat also as many fruits as they can get.

This is the daily food of the labourers, and even of many well-up persons here in these islands. All the food of the inhabitants of these islands, with few exceptions, are cooked by the use of cocoanut oil, instead of lard.

Those who are landowners, not all, but a few, feed themselves better. Here, again, you see daily on the table, morning and night, always either fresh or salted fish, rice, lentils, peas, haricots, fruit a pins; manioc, twice or thrice weekly; fowls, once or twice a month; pork, once a month, sometimes none at all; sea turtle, perhaps once, perhaps not at all during six months, but sometimes not at all during a whole year.

With such food, one is not astonished to see so many serious cases of anæmia among the inhabitants of these islands.

2nd. Gonorrhœa is the next common disease you meet with here. These cases, complicated with soft or hard chancres, or alone, or the soft chancres alone, or the hard chancre alone.

3rd. Tetanus, almost always traumatic in nature. Very dangerous disease, almost always fatal here.

4th. Abscesses. Numerous cases, especially during the hot season of the year, due to the low state of vitality of the tissues, due to anæmia.

5th. A few cases of rheumatism.

6th. At the change of seasons you meet with numerous cases of bronchitis.

7th. Fever, of a malarial type, which yields easily, when not complicated with other affections, to a few doses of bromhydrate de quinine and antipyrine, and generally lasts only one, two, or three days at the utmost. SEYCHELLES
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8th. You meet also with numerous cases of hydrocele and hernia.

9th. Cases of leprosy. Not many, I must say, of these cases exist at Praslin and La Digue.

10th. At certain times of the year, especially during the hot seasons, and especially after heavy rains, a good many cases of diarrhœa and dysentery are the two usual things you meet with.

CURIEUSE.

A pretty large island, and a very healthy one, used by Government as an asylum for paupers and lepers.

Though I must say it is a pity to see such a large island lost for the only use of so few lepers and paupers, yet I have no hesitation to say none better shall be found so comfortable for such an establishment as the one existing there at present.

At Curieuse you have plenty of water, and very good water; plenty of room for the inmates to move about.

Yet, if cultivated, if planted in vanilla and the number of cocoanut trees increased, Curieuse is an island to revert on her happy owner a very large fortune.

The amount of paupers admitted at Curieuse in 1899 were:—Male, four, and female, one, total five; and the largest amount of paupers at Curieuse in 1899 was:—Male, 11, and female, 1, total, 12. One male pauper was discharged from the pauper camp at Curieuse in 1899. Among the paupers at Curieuse we had in 1899 eight deaths, six males and two females.

In 1899 one leper was admitted at Curieuse Asylum, one male.

The largest number of lepers at Curieuse in 1899 were five males, one female; total six.

No death occurred among the lepers in the asylum at Curieuse in 1899.

No leper discharged from the asylum of Curieuse Island in 1899.

Remaining in the pauper asylum at Curieuse on the 31st December, 1899:—Paupers, male, six; female, one; total, seven. Lepers, male, five; female, one; total, six.

The amount of patients treated at the Praslin and La Digue Dispensary in 1899 were:—Males, 335; females, 57; total, 392 patients treated and drugs issued to free of charge.

E. M. PORTAL,

Assistant Government Medical Officer, &c., &c.

Praslin, May 7th, 1900.

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No. 20.

SIERRA LEONE.

EXTRACTS FROM REPORT OF THE COLONIAL MEDICAL DEPARTMENT FOR 1899.

PUBLIC HEALTH.

The number of deaths registered in the Colony was 1,768, as against 1,683 in the previous year, giving a death-rate of 23·62 on the population of 74,835 as ascertained at the last census.

The following table shows the total number of deaths and births registered in the Colony for the past ten years :—

	Births.	Deaths.	Births in Excess.	Deaths in Excess.
1890	1,238	1,427	—	189
1891	1,383	1,389	—	6
1892	1,210	1,413	—	203
1893	1,286	1,294	—	8
1894	1,276	1,449	—	173
1895	1,445	1,509	—	64
1896	1,541	1,632	—	91
1897	1,645	1,734	—	129
1898	1,857	1,768	174	—
1899	1,494	1,768	—	274

The total number of births, 1,494, gives a birth-rate of 19·93 per thousand living.

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Once again the birth-rate falls back to its former level, and the deaths show an excess. I may repeat here that it is extremely doubtful whether this represents the correct state of matters. The registration laws call for much more strict enforcement. Not only have the deaths in the past been registered in a very careless and perfunctory manner, but it is very doubtful whether a large number of births do not entirely escape registration.

FREETOWN.

I have dealt very fully with the health of Freetown in my annual report as Medical Officer of Health to the municipality, of which I submit a copy. I may summarise briefly the results:—

Total number of deaths ...	...	...	923
Death-rate per 1,000 ...	...	...	30·73
Death under five ...	...	...	296 or 32·67 of whole.
Death-rate per 1,000 living under five ...	...	...	114·7
Death at twelve months or under ...	...	...	242
Infantile mortality ...	...	...	428·3
Total births ...	...	...	565
Birth-rate ...	...	...	12·12

Small-pox.—A somewhat extensive epidemic took place in the town during the year, and 157 cases were removed to the Small-pox Hospital, Kissy. Of these 34 died, and, though registered in Kissy, really belong to the city. If this addition were made, the death-rate would be raised to 31·23 per 1,000.

The European death-rate.—The number of deaths among Europeans was nine, as against 14 in 1898. The following were the causes of death:—

Black water fever ...	...	...	...	4
Remittent malarial fever	2
Beri-beri	1
Syncope	1
Extravasation of urine following stricture	1

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The following list gives the number of European deaths since 1886 :—

Year.	Landed for Burial.	Resident in Freetown.		Total.
		Climatic.	Otherwise.	
1886	3	—	—	3
1887	4	—	2	6
1888	1	1	3	5
1889	—	3	6	6
1890	2	3	1	9
1891	5	3	2	10
1892	4	6	2	12
1893	5	4	4	13
1894	1	13	2	16
1895	—	4	2	6
1896	3	5	2	10
1897	2	13	—	15
1898	2	8	4	14
1899	—	6	3	9

1899 thus shows the lowest number of deaths for nine years, with the single exception of 1895. It will be noted that there were an unusual number of deaths from black water fever, of which one came from Songo town in December. Those which occurred in town were during the months of May, October, and December respectively. It is worthy of note that all these cases were of exceptional severity, were almost hopeless from the first, and occurred in individuals who were debilitated from previous attacks of fever or from other causes.

Two hundred and fifty-nine officials were on the sick list during the year, of whom seventy-seven were Europeans, and one hundred and seventy-eight, natives.

The European officers were invalided to the islands.

Infantile mortality.—I have in every annual report since 1895 drawn attention to the enormous infantile mortality which takes place in Freetown, amounting this year to 428·3. I have

pointed out that this enormous loss of life takes place principally within the first few hours after birth, and is evidently connected with the process of parturition. Apart from this, there is an enormous amount of maternal disease and sterility, due to the mismanagement of labour and the puerperium. I have also drawn attention to the fact that very few cases are attended by duly qualified medical men, and that the majority are left to the tender mercies of midwives, whose principal qualifications for the post are an appalling ignorance, and very often a capacity for getting intoxicated at the most critical stage of labour. I have suggested as a remedy for this state of matters the registration of midwives.

Quarantine.—In the beginning of May, in consequence of information which had been received that bubonic plague existed on the French Ivory Coast, a meeting of the Quarantine Board was held, and it was decided that the Ivory Coast should be placed in quarantine. It was extremely difficult to obtain definite information on the point, and it is now extremely doubtful whether it actually was bubonic plague. There is no doubt, however, that yellow fever subsequently broke out and raged with great severity, causing a heavy mortality. In consequence of this, the Ivory Coast was kept in quarantine until the 15th October, when it was declared no longer infected. During this time only two vessels were placed in quarantine.

In October the “Jebba” arrived with the report that two cases of small-pox had occurred on board. It was accordingly placed in quarantine and the Krooboys and native passengers isolated at the lazaretto.

COLONIAL HOSPITAL.

MEDICAL REPORT AND STATISTICAL RETURNS FOR THE YEAR 1899.

General Disease.

(a.) *Malarial fevers.*—Intermittent fever was the cause of 41 admissions and 2 deaths, and remittent fever of 45 admissions and 4 deaths. The large number of admissions under these heads consisted of natives belonging to the labouring classes. There were also a few cases among the European section of the community, but these were all Syrian pedlars.

(b.) *Tetanus* was the cause of 19 admissions, resulting in 9 deaths, or 47·3 per cent., the majority of these cases may be classified as traumatic, they having suffered from ulceration of the toes and feet caused by jiggoes, punctured wounds of the soles of the feet, and others following surgical operations.

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(c.) *Rheumatism* was the cause of 111 admissions, but no death resulted. This compares favourably with the previous year, when there were 103 admissions resulting in 5 deaths. There was no case of rheumatic fever.

(d.) *Veneral disease*.—Primary syphilis was the cause of 18 admissions, and secondary syphilis of 17 admissions. These numbers, when compared with the population of Freetown, are exceptionally small. This is due to the fact that in the majority of cases the sufferer does not apply to the hospital as an out-patient or intern-patient for treatment. Such cases as are seen and recorded occur principally amongst members of the civil and frontier police forces; boatmen who are in the Government service, and who are from necessity compelled to apply for treatment; and others from the middle class, who also do so from better knowledge.

It is my belief that a large number of cases, especially in the tertiary stage, must be floating about in the city, and that many cases of alleged "poison throwing" on individuals amongst the various classes in the community, and which have resulted in ulcerations of various kinds, are nothing else than syphilitic diseases.

The majority of these cases have fallen into the hands of the country doctors for treatment, with the result that some of the patients have escaped with their health wrecked and their life in their hands so to speak; others with serious destruction of tissues; and all looking for aid when too late from the hands of the medical practitioner. But this serious state of affairs does not, in my opinion, warrant the use of the sweeping expression which has been made lately, that the natives of the Colony are without exception syphilitic—an expression the truth of which is neither borne out by experience nor justified by facts.

(e.) *Diseases of the digestive system* were the cause of 160 admissions and 26 deaths, or 10·1 per cent. These deaths occurred amongst patients who suffered from diarrhœa and dysentery.

(f.) *Diseases of the generative system*.—Forty-five males and 36 females were admitted, of whom 11 and 1 died respectively.

(g.) *Ankylostomiasis*.—Two cases were admitted during the year. The condition produced by the worm *Ankylostomum Duodenale* is not as common in this Colony as in some of the West Indian Islands, where it forms a large percentage of their disease rolls.

In this Colony cases are only occasionally met with, and the rareness of their occurrence has led to the idea that it does not exist here.

With respect to the two admissions, the patients, who were two little girls about the respective ages of 10 and 12 years, were admitted into hospital in the month of July last,

The elder was anæmic and dropsical; her face, abdomen, and feet were swollen; the skin had a yellowish-green hue; the conjunctivæ and oral mucous membrane were pallid; heart's action regular, impulse weak, hæmic murmur audible, the spleen enlarged, liver normal, no albumen was present in urine. The mother stated that she had been informed by country doctors that the child was suffering from the effects of witchcraft. I at once placed her and the other child, who was suffering similarly but not to the same degree, upon thymol, and I ordered the stools to be kept and washed in search of the worms. In the case of the elder half-a-dozen worms were discovered; in the other case the stools were thrown away by my dresser, Mr. Wright, who said he thought it was not necessary to make a further search. I continued the treatment of these cases with diuretic and blood tonics, and subsequently discharged both of them from the hospital cured.

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Capt. Fredk. Smith, R.A.M.C., whilst stationed at Bandajuma, in the Protectorate, reported in the *British Medical Journal*, of 2nd December, 1899, the discovery of a case in the person of a soldier of the West African Force, and in his report remarked that in his experience anæmia is not a disease of the Mendi tribe. I would here emphasize his remark and amplify it by saying that anæmia produced by the *Ankylostoma* is not a disease commonly met with amongst the natives of this Colony and the Protectorate.

W. RENNER, M.D.,

April 9th, 1900.

Assistant Colonial Surgeon.

ANNUAL MEDICAL REPORT FOR KARENE DISTRICT for 1899.

SIR,

I HAVE the honour to submit the following report for Karene District for the past year :—

I.—HEALTH GENERALLY.

(a.) *Europeans*.—The health of the European officials stationed in the district during the year has been very good. Four officials were relieved during the year, viz. :—The District Commissioner, Captain Sharpe, in May, Captain Warren in April, myself in February, and Doctor Ward in October. The Acting D.C., Mr. Sangster, had an attack of appendicitis in June, for which he was treated in Freetown, and in October he had a simple fracture of both bones of the right leg into the ankle joint, on which a separate report has been submitted. With these exceptions there

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has been no sickness among the Europeans, and the station bears out the character given it in previous reports of being a healthy one for Europeans.

(b.) *Native Officials*.—The health of these has been equally good. No cases of serious illness have occurred; the cases of fever reported have been slight in character, yielding readily to treatment, and the other ailments presented no features of any note.

(c.) *Frontier Police*.—Cases of sickness are more numerous, as one would expect on account of their being exposed by constant patrols. It was noticeable that cases of sickness amongst Frontiers were much more numerous than among the men of the W. A. Regiment, who were merely required for garrison duties and were not subject to the hard work of the Frontiers. Digestive disorders bulk most largely, mostly trivial. Constipation is common. Diarrhœa relatively infrequent. Symptoms of hepatic disturbance are rare, and no cases of hepatic enlargement have been under my observation.

Injuries—slight bruises and contusions, &c., to which the men are much exposed by bare feet and legs, are of course common and sometimes incapacitate them from duty for a few days. Slight cases of fever and rheumatism, which in many, perhaps all, cases is a sequela of fever, are fairly common in the station, especially at the beginning and end of the rains. None of the cases occurring here are severe, occasionally a more severe case is seen in a man from an out-station who has been untreated and has possibly been staying in a less healthy locality. Gonorrhœa has become much more common in the station since a garrison, first of W. I. Regiment and then of W. A. Regiment, was stationed here. Before that it was rarely seen at headquarters, now it is all too common, and the cases recorded only represent a proportion of men suffering as they rarely come for treatment unless the disease is acute or they are suffering from sequelae. No cases of primary or secondary syphilis have been under observation.

Several cases of bronchitis and pleurisy have occurred, sub-acute in character. In some of these cases the malarial parasite has been present in the blood and treatment by quinine has been efficacious.

Skin diseases are relatively uncommon on account of the cleanly habits of the men.

(d.) *Natives*.—The number of native patients increases and is likely to do so as they gain more confidence in European methods of treatment. Cases are being drawn from a larger area and continue under treatment for a longer period than formerly. For many diseases, however, they still prefer to resort to native drugs.

Digestive disorders are relatively common, as one would expect from the bulky nature of their food, and great degrees of dilatation

of the stomach are sometimes seen. Constipation is common. Diarrhœa relatively uncommon and dysentery seemingly absent.

Late secondary and tertiary lesions of syphilis are common, also non-specific ulcers of the skin—scabies and other skin diseases. Gonorrhœa and its sequela is to be found in every part of the district.

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II.—DISEASES OCCURRING IN THE DISTRICT.

Information as to this must naturally be imperfect as cases presenting themselves at headquarters for treatment are mostly drawn from the adjoining towns, within a day's journey, though occasionally cases come from a greater distance. I have, however, had opportunities of seeing other parts of the district and cases of disease there.

Small-pox.—There has been no information this year of any epidemic such as occurred at the end of 1898 in part of the district.

Dysentery is practically unknown. Sporadic cases occur which present all the clinical features of true dysentery, but usually yield very readily to treatment by sulphate of magnesia.

Malarial fever is to be met with all over the district among the natives. Attacks are, as a rule, mild, though the natives say that occasionally there are severe and fatal epidemic of what they call "yellow fever," whether this is true yellow fever or bilious remittent malarial fever there has been no opportunity of observing. Fever is much more common among children than adults, and almost all the children on enquiry are found to have periodic attacks. As noted in previous reports, enlarged spleen is nearly always present in young children—sometimes extending to the umbilicus. As they grow older this seems to disappear and in children over 7 it is rarely to be found, in adults not at all. The malarial parasite has been found in the blood of a number of cases examined.

In the neighbourhood of the station the anopheles variety of the mosquito has been discovered and is apparently fairly numerous. The larvæ of the anopheles I have not discovered there. The station and adjoining village are well drained and on a gravel soil, so that none of the puddles described by Ross as breeding places are to be found.

As has been pointed out by other observers, the mosquitoes probably breed in the swamps bordering a stream. In the rains there are large, low-lying areas covered by thick coarse grass, which are flooded by the stream, and which in many parts are quite inaccessible to fish which might feed on the larvæ. The natives themselves say that the mosquito is to be found in the daytime in the long grass in the swamps, and it is noteworthy that a native town always has a belt of thick bush and trees surrounding it and cutting it off from the adjoining swamps.

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Beri-beri.—There have been no cases presenting the features of this disease.

Filarial diseases.—Elephantiasis and lymph scrotum are not seen in this district, at all events in the parts I have visited. I am informed they are occasionally seen in Susu country, and they are, of course, prevalent in many parts of the Mendi country. No cases have been under observation during the year. I have not been able so far to find either filaria perstans or filaria nocturna in the blood of cases examined.

Syphilis.—Cases have been seen from every part of the district. Most of the cases present late secondary or tertiary symptoms. Occasionally a history of a primary sore is to be got. The history of the secondary eruption can never be got, as it would, of course, be confused by the natives with other skin eruptions and called *craw*.

Cases under treatment are, as a rule, gummata in bones or connection tissues, coming as a rule when broken down, and so causing the most extensive ulcerations and frequently great deformity. Frequently an acute bacterial infection has been superadded to the original gumma, and extensive cellulitis and necrosis taken place. Cases are frequently localised—one village presenting many cases in all stages while the adjoining may be free. Tertiary manifestations are not uncommon among young girls, where the original infection must have been contracted before there was any likelihood of sexual connection. It seems probable that the “*bundu*” ceremonial may be the means of spreading it: in some cases certain manifestations of syphilis are absent.

Rupia I have not seen, nor have any cases of cerebral syphilis been under treatment. No cases of tabes or general paralysis have been seen, but these one would scarcely expect as syphilis is only one factor in their production.

Congenital syphilis is occasionally met with, though many of the commoner manifestations are absent.

I have never seen a case of Hutchinson’s teeth, and interstitial keratitis is rarely seen. All syphilitic skin eruptions in children are put down by the natives to *craw* or *yaws*. In one village a severe epidemic of pemphigus was seen amongst the children, which had proved fatal to several. It was probably syphilitic, as there were adults suffering from syphilis in the village.

Cases of syphilitic gummata do best on a combination of iodide and mercury. Relapses are common if the treatment be left off too early.

Yaws.—This disease is very common, but, as a rule, very mild in character, and cases are rarely seen.

Leprosy is endemic in all parts of the districts, though the cases are not very numerous—not as compared to the numbers suffering from syphilitic lesions. Occasionally, of course, they are conjoined. The natives often recognise it and discriminate between the two varieties—anæsthetic and tubercular. Well marked cases of both have been seen, and also mixed cases presenting all the lesions characteristic. Sores often heal under some simple ointment, but readily relapse. Cases are, as a rule, localised—one village showing several while adjoining may be free. The natives do not isolate unless in the later stages, where the sufferer is very offensive.

It may be noted, as supporting Hutchinson's theory, that imperfectly cured fish forms part of the natives' diet.

As regards local diseases, organic diseases of the nervous system are apparently uncommon. Epilepsy and insanity are occasionally seen.

There is a certain amount of organic heart disease, resulting probably from overstrain—both aortic and mitral regurgitation have been seen. Mitral stenosis I have never seen—this is to be expected in a country where acute rheumatism is not known.

Respiratory diseases are not uncommon; acute lobar pneumonia has occurred, but is rare.

Digestive disorders are common; teeth are generally defective. Most of the disorders seen are of the nature of gastric catarrh, with frequently dilatation of the stomach. Gastric ulcer has never been seen, nor any cases of malignant growth affecting the stomach or intestines.

Goitre is common in some parts of the district, especially in the east and north-east: it may attain a large size without inconveniencing.

Diseases of the female genital organs are common, probably due to the prevalence of gonorrhœa, causing endometritis, pelvic cellulitis, salpingitis, and the other cases seen.

IV.—GENERAL FORMATION OF THE DISTRICT.

There is little here to add to last report on this. The district is of volcanic origin all over as far as I have seen. In many parts the rock is very near the surface and the soil is in consequence poor, but mostly there is a thick bed of gravel below which is clay. The absence of trees constitutes a noteworthy feature; this is largely due to the habits of the natives who in clearing the ground for cultivation cut down everything and then burn; as a result of this, I believe, the grass plains are spreading in area: these plains are practically unproductive and as they are waterless during the dry season, the natives do not build towns on them. If a patch of ground be burnt for several

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years the bush with which it was covered originally dies out and is succeeded by coarse tall grass. This will in time have an injurious effect on the district as a whole. Except on these grass plains water is abundant everywhere.

V.—THE STATION.

This was described in last year's report. The buildings are the same on the two hills. The two sites are good, well drained, and with a satisfactory water supply for eleven months in the year. As the Mabole River is near, there is but little disadvantage from the failure of the streams in March.

As regards the quarters, some will require considerable alteration to be habitable during the rains. The defects of the buildings at present in use are their inflammable roof. The roof being of straw is always liable to be set on fire, and three have been so destroyed in the last two months. (ii.) The difficulty of keeping them dry in the rains. This is partly due to bad thatching—the slope being insufficient—partly to the tornadoes which blow with considerable force on buildings so exposed. There is a third cause in houses for Europeans; a native always has fire in his house—the smoke preserves the straw from rotting and also helps to seal it, as well as preserving the beams. For obvious reasons a white man cannot live under such conditions. I am still of opinion that a properly built native house is preferable in most cases to a wooden house in this country. It is much cooler and if well looked after is quite as dry; the difficulty is in the roofing on account of the absence of wood in this district. The houses in use are certainly to be preferred to the wooden bungalows in use at Port Lokko for the troops—which have no double roof, have a verandah only on one side and are raised sufficiently from the ground to harbour reptiles and insects and to allow the growth of vegetation, but not sufficient to allow of the access of light or of their being cleaned. If alterations were to be made in the houses the question ought to be considered of using brick or concrete. There is clay in abundance in the district, which is extensively used by the natives to make earthenware pots, and which has been used by the missionaries in various parts for the manufacture of bricks for houses. Properly built brick houses with a concrete roof would have a permanency that the present houses have not got, would be unaffected by fire, and would, it seems to me, combine the advantages of wooden bungalows and native hut.

Barracks and civil lines are situated on two adjoining elevations surrounding which are swamps; these are at some distance at present and seem to cause very little harm. If the station were shifted as is proposed to Mabanta it is doubtful if this site would be as suitable medically. It is on high ground immediately overlooking the river, between the hill and the river is a plain

which in the rains is a swamp. If this site were chosen the lower part of the hill should be planted and allowed to grow up to interpose a belt of trees between the swamp and the station. Drainage of the swamp is of course out of the question, as it is due to the river flooding its banks during the rains.

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The importance of a site is well seen in the mission station at Makomp, which is a well built brick house raised on pillars and is certainly a much better house than the quarters at Karena. It is on an elevation immediately overlooking the Rokell and between it and the river is an area of flat swampy ground. The missionaries are never well there and several have died, while at another in the same district which has no swamps in its immediate vicinity the health of the missionaries is fairly well maintained.

If, as there is reason to believe, the mosquito breeds in the swamps, any preventive measures such as suggested by Major Ross would be utterly impracticable. One could not coot a swamp of several acres extent and covered with long grass with kerosene, nor is it practicable to drain these swamps—they are raised so little above the river level. The only means one can adopt are to ensure that the station shall be as little subjected to their influence as possible, by choosing a site well removed from swamps, by planting where necessary so as to cut them off, and by ensuring that the officials shall have houses in good condition to live in. Where houses can be built, as here, on an elevation and a gravelly soil, which is dry even in the heaviest rainfall on account of the excellent natural drain, the value of raising them from the ground on piers is doubtful, but on other and more low lying sites this may be necessary. In this station it would not seem to be necessary, it would not make them drier and it could not raise them above the morning fog which rises well over 20 feet above the houses.

I append hereto a return of patients under treatment in the hospital and a return of those attending the dispensary. It would be of value in future alterations to provide accommodation for natives requiring hospital treatment. At present the hospital is in barracks and is reserved for frontiers and native officials—in time it would, I think, be advisable to transfer it to the civil lines and provide accommodation for natives as the numbers of the latter are increasing.

I have, &c.,

J. C. MAXWELL.

Karena,

January 25th, 1900.

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REPORT OF THE BANDAJUMA DISTRICT FOR THE YEAR 1899.

(Extract.)

HEALTH OF EUROPEAN OFFICERS.

During the past year 15 officers have lived in this district for periods ranging from three weeks to 12 months. Of these five have been invalided, the cause, except in one instance, being malarial fever in one or other of its forms. The exception was Captain E., of the Frontier Police.

Blackwater fever.—Two cases of this disease have occurred during the past 12 months. I believe in both cases the infection was contracted whilst on patrol.

Captain E. told me that he drank some bad water out of a stagnant pool on the day before he got back to Bandajuma from a journey. In a few days he was in bed with what appeared to be an ordinary attack of remittent malarial fever, of which he had had several before. However, hæmoglobinuria, with jaundice, appeared one morning and lasted for several days. There was never much albuminuria and few castes.

Captain E. had had to travel about the country during the rainy season, and was very anæmic before this attack.

In the case of Captain R., he also had just returned from patrol, and the time was the end of the rains. Jaundice in his case was a very slightly marked symptom, and there was but little albumen in the urine. As he appeared to recover health quickly after the hæmoglobinuria ceased, I did not press him to leave the country. He has had no return of the disease. I may mention that all the officers who have been temporarily invalided have since regained their health.

HEALTH OF NATIVE CLERKS.

These officials, of whom there are five here, have been remarkably well throughout the year.

HEALTH OF FRONTIER POLICE.

There have been no deaths amongst the police during the past year. Two members of the force have, however, been invalided out of the service because they had phthisis; both were men of slight frame, not fitted to stand the severe strain which the duties of the Frontier Police often entail.

Venereal diseases are common; gonorrhœa and soft chancres are seen more than syphilis.

When the men are in barracks they live with their own wives, and seldom contract these diseases; it is when they go on patrol that they mostly get infected with them. When cases occur in barracks inquiries are always made after the women concerned; when found, are put under treatment.

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EPIDEMICS.

At the beginning of the year there was an epidemic of small-pox in the town. The place was at that time very much overcrowded, and cases kept breaking out for some time, some amongst the police in the barracks. The police, their wives and children, and many of the townspeople have since then been vaccinated, but isolated cases occasionally occur in town. As a rule natives have the disease in a mild form, but there were several deaths from it in a village near Bandajuma.

Several cases of chicken-pox have occurred amongst the children in the town.

In the early part of the year there were a good many cases of diarrhoea amongst the men. This I put down to fouling of the river banks by the many soldiers and carriers who slept here when the expedition was passing through on its way round the country.

A case of pronounced anæmia and debility in a West African soldier was found, on examination of the fæces, to be caused by the presence of *Ankylostomum Duodenale*.

No more cases of the kind have been brought to notice.

Elephantiasis.—Only one case has been brought to my notice in this town, but there are many in the villages between this place and Panguma, and no doubt also in other parts of the district.

One case of leprosy has been shown to me in this town. It was a case of nerve leprosy in a man about 40 years of age. He did not belong to this part of the country.

It is noticeable that the type of malarial fever which occurs amongst the natives during the rains has been of a much more transient type than that which occurs at the beginning of the dry season.

J. B. H. DAVSON,

District Surgeon.

January 20th, 1900.

SIERRA
LEONE,
1899.

RETURN of DISEASES and DEATHS in the COLONIAL
HOSPITAL.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES—			
Small-pox	—	—	
Measles	—	—	
Typhus	—	—	
Dengue	—	—	
Influenza	—	—	
Diphtheria	—	—	
Febricula	—	—	
Enteric Fever	—	—	
Cholera	—	—	
Dysentery	—	—	
Yellow Fever	—	—	
Malarial Fever—			
(a.) Intermittent	41	2	
(b.) Remittent	45	4	
(c.) Pernicious Remittent	—	—	
Erysipelas	—	—	
Pyæmia	—	—	
Septicæmia	1	1	

Colonial Hospital—cont.

SIERRE
LEONE,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES— <i>cont.</i>			
Tetanus	19	9	
Tubercle	10	6	
Leprosy—			
(<i>a.</i>) Anæsthetic	—	—	
(<i>b.</i>) Tubercular	—	—	
Yaws	—	—	
Syphilis—			
(<i>a.</i>) Primary	18	—	
(<i>b.</i>) Secondary	17	—	
(<i>c.</i>) Inherited	—	—	
Gonorrhœa	16	—	
Hydrophobia	—	—	
Scurvy	—	—	
Alcoholism	4	1	
Delirium Tremens	—	—	
Rheumatism	111	—	
Rheumatic Fever	—	—	
Gout	—	—	
New Growth, non-malignant ...	11	1	
" malignant	—	—	
Anæmia	7	1	
Diabetes mellitus	—	—	
" insipidus	—	—	
Debility	32	5	
Lethargus	1	1	

SIERRA
LEONE
1899,

Colonial Hospital—cont.

Diseases.	Yearly Total.		Remarks
	Cases.	Deaths.	
LOCAL DISEASES—			
DISEASES OF THE NERVOUS SYSTEM—			
Sub-section 1—			
Diseases of the Nerves—			
Neuritis	6	—	
Meningitis	—	—	
Myelitis	4	2	
Hydrocephalus	—	—	
Encephalitis	—	—	
Abscess of Brain	—	—	
Congestion of Brain	—	—	
Sub-section 2—			
Functional Disorders—			
Apoplexy	1	1	
Paralysis	7	3	
Convulsion	1	1	
Epilepsy	4	1	
Neuralgia	1	—	
Hysteria	—	—	
Sub-section 3—			
Mental Diseases—			
Idiocy	—	—	
Mania	—	—	
Melancholia	—	—	
Dementia	—	—	
Delusional Insanity	—	—	

Colonial Hospital—cont.

SIERRA
LEONE
1899.

Diseases.	Yearly Total.		Remarks,
	Cases.	Deaths.	
LOCAL DISEASES— <i>cont.</i>			
Diseases of the Eye	6	—	
" " Ear	—	—	
" " Nose	2	—	
" " Circulatory System	10	5	
" " Respiratory System	49	13	
" " Digestive System ...	160	26	
" " Lymphatic System	17	1	
" " Urinary System ...	15	6	
" " Generative System—			
Male Organs ...	45	4	
Female Organs ...	36	1	
" " Organs of Locomotion.	8	—	
" " Cellular Tissue ...	31	2	
" " Skin	216	1	
Injuries, General	10	10	
" Local	90	1	
Surgical Operations	22	—	
Malformation	—	—	
Poison	—	—	
Parasites... ..	—	—	
Filariasis... ..	3	—	
Filaria Medinensis	4	—	
Ankylostomiasis	—	—	
Other Causes	4	—	
Total	1,086	109	

SIERRA
LEONE,
1899.

COLONIAL AND SMALL-POX HOSPITALS, SHEBRO.

Diseases	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES—			
Small-pox	16	3	
Measles	—	—	
Typhus	—	—	
Dengue	—	—	
Influenza	—	—	
Diphtheria	—	—	
Febricula	—	—	
Enteric Fever	—	—	
Cholera	—	—	
Dysentery	—	—	
Yellow Fever	2	—	
Malarial Fever—			
(a.) Intermittent... ..	—	—	
(b.) Remittent	4	—	
(c.) Pernicious R.	12	1	
Erysipelas	—	—	
Pyæmia	—	—	
Septicæmia	—	—	
Tetanus	—	—	
Tubercle	—	—	
Leprosy—			
(a.) Tubercular	—	—	
(b.) Anæsthetic	—	—	
Yaws	—	—	

Colonial and Small-pox Hospitals, Shebro—cont.

SIERRA
LEONE,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES—cont.			
Syphilis—			
(a.) Primary	1	—	
(b.) Secondary	—	—	
(c.) Inherited	—	—	
Gonorrhœa	3	—	
Hydrophobia	—	—	
Scurvy	—	—	
Alcoholism	—	—	
Delirium Tremens	—	—	
Rheumatism	30	—	
Rheumatic Fever	—	—	
Gout	—	—	
New Growth, non-malignant	1	—	
„ malignant	—	—	
Anæmia	1	—	
Diabetes mellitus	—	—	
insipidus	—	—	
Debility	—	—	
LOCAL DISEASES—			
DISEASES OF THE NERVOUS SYSTEM—			
Sub-section 1—			
Diseases of the Nerves—			
Neuritis	—	—	
Meningitis	—	—	
Myelitis	—	—	

SIERRA
LEONE,
1899.

Colonial and Small-pox Hospitals, Shebro—cont.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES—cont.			
Diseases of the Nervous System—cont.			
Sub-section 1—cont.			
Diseases of the Nerves—cont.			
Hydrocephalus	—	—	
Encephalitis	—	—	
Abscess of Brain	—	—	
Congestion of Brain	—	—	
Sub-section 2—			
Functional—			
Nervous Disorders	—	—	
Apoplexy	—	—	
Paralysis	—	—	
Chorea	—	—	
Epilepsy	1	—	
Neuralgia	—	—	
Hysteria	1	—	
Locomotor Ataxia	1	—	
Sub-section 3—			
Mental Diseases—			
Idiocy	—	—	
Mania	—	—	
Melancholia	—	—	
Dementia	—	—	
Delusional Insanity	—	—	

*Colonial and Small-pox Hospitals, Shebro—cont.*SIERRA
LEONE,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES— <i>cont.</i>			
Diseases of the Eye	1	—	
" " Nose	—	—	
" " Circulatory System	2	2	
" " Respiratory System	5	1	
" " Digestive System ...	5	1	
" " Lymphatic System	6	—	
" " Urinary System ...	—	—	
" " Generative System—			
Male Organs ...	12	—	
Female Organs ...	2	—	
" " Organs of Locomotion.	2	—	
" " Cellular Tissue ...	2	1	
" " Skin	24	—	
Injuries, General	1	—	
" Local	4	—	
Surgical Operations	—	—	
Malformations	—	—	
Poisons	—	—	
Parasites	—	—	
Total	139	9	

M. L. JARRETT,

Assistant Colonial Surgeon.

April 28th, 1900.

TRINIDAD
AND
TOBAGO,
1899

No. 21.

TRINIDAD AND TOBAGO.

REPORTS FOR 1899.

INDIAN WALK DISTRICT.

Indian Walk,

27th January, 1900.

SIR,

I HAVE the honour to submit the health report of the Indian Walk District for 1899.

I went on leave in April, and was away during the remaining part of the year.

Anterior to my departure there was little to record. The health of the District up to that period was good.

Paupers.—During the year it seems that 498 persons were treated on pauper certificates. This is an increase over the number for 1898. In the most healthy and prosperous district of the Colony there should, in my humble opinion, be a decline in pauperism.

Vaccination.—345 successful cases.

Yaws.—The subject of yaws, I submit, deserves serious consideration. 164 cases came under treatment during the year. Of these 54 were cured. Some cases were recurrent. With a few exceptions, all these cases were treated under the yaws dispensary or out-door system. This is a good system in a way, but I adhere to what I said in my last year's report, viz.:—
‘That compulsory treatment in Central Yaws Hospitals will be “the only effective means of ever stamping out this troublesome disease.”’

Every case of yaws is a focus of infection, and the disease is spread by contagion and direct contact. Fresh cases continue to present themselves, and, it is reasonable to conclude, will continue to, until the foci of infection are removed.

Yaws is a dirt disease—propagated and kept up by dirt and existing almost without exception in dirty people. One of the “problems of the future” in connection with this disease would seem to be “how best to improve the dwellings of the poorer and less intelligent classes.”

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The houses of most of these people are bad, badly built, badly kept. Visiting them at mid-day, I frequently have to get a lamp to enable me to see the patient. Every particle of light is excluded, and a characteristic and sickening odour pervades the sleeping apartments.

The want of proper and adequate water supply tends to encourage them in dirty habits.

90 per cent. of the cases of yaws belong to the “great unwashed,” though I supply them with soap.

If yaws is propagated and transmitted, as undoubtedly it is, by dirt, and dirty people of dirty habits, living in insanitary dwellings, I think it not unreasonable to suggest that attention might be invited in that direction.

The “order,” however, is a serious and a very large one.

The following is the result of bacteriological examination of yaws matter I made when recently residing at the “London School of Tropical Medicine.” The yaws material was kindly forwarded by the Honourable the Acting Surgeon-General, and by Drs. Eakin and Dickson.

Received November 23rd, 2 lots yaws matter, A. B.:—

A. 2 tubes { (1.) Yaws scraping : } In glycerine.
 { (2.) Do. tubercle : }

B. 3 tubes { (1.) Yaws scraping : } In glycerine.
 { (2.) Do. tubercle : }
 { (3.) Do. do. }

The tubercles were hardened in alcohol and microtomic sections made and stained as follows:—

- | | | |
|---|-----|-------------|
| (a.) Simple stain (Ziel Neilsens) ... | ... | Result Nil. |
| (b.) “ “ (Löffleers Blue) ... | ... | “ “ |
| (c.) Double stain (Easin & Hormatoscylin) ... | ... | “ “ |
| (d.) “ “ (Graim’s Method) ... | ... | “ “ |
| (e.) Triple stain (Erldrick Beondi) ... | ... | “ “ |

(Histological changes were noted—but this is purely a Bacteriological Report, and they are not recorded here.)

Slide and cover glass preparations of the fresh scrapings were examined, stained and unstained, and showed multi-nuclear cells with granular matter and non-striated fibre bodies.

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Sterilized broth cultures were made from scrapings A., and incubated at 35° C. for 24 hours. The growth, yellowish and turbid, was examined microscopically. Cover glass preparations fixed and stained α . Carbol fuschine gave:—

(a.) Laccí, (b.) Diplococci, (c.) Yetia Locci, and (d.) Staphylococci.

From the birth cultures, sub-cultures were made—

(1.) 3 on Gelatine, Petri Dis-Firs and incubated at 22° C.

(2.) 1 on Agar-Agar „ „ „ 35° C.
Distinct colonies grew.

Those on the gelatine (some of which produced liquefaction) when fixed and stained were shown to be the micro-organisms mentioned above, and in addition a bacillus, short, though varying in length, and thick.

The Agar plate in 24 hours showed 2 well-defined colonies.

(a.) Yellow, thick growth along streaks, and (b.) white-creamy and arborescent growth.

Preparations from (a.) stained ... Staphylococci.

„ „ (b.) „ ... Bacilli,
numerous, short, thick, involution forms which in hanging drop preparations were actively motile.

Stained \div . Carbol-fuschine, as above, with rounded ends, rod-shaped—spur and mature forms—varying in length.

(Absolutely pure cultures of this Bacillus were obtained.)

The yaws scrapings B. were dealt with in similar manner—some stab-cultures in depth of gelatine being made as well. The results were identical, but for the addition of Streptococci and Bacilli, forming filaments.

Remarks.—The Staphylococci grown was the “S. Pyogene’s Aureus.” This and the other micro-organisms described are not pathogenic of yaws.

The Bacillus, also described, is the “Bacillus Subtilis” which is found in hay, air, dust, and soils. It is non-pathogenic. No other micro-organisms seemed to be present in yaws material dealt with.

I have, &c.,

R. C. BENNETT,
District Medical Officer.

The Honourable
THE SURGEON-GENERAL.

REPORT ON THE COLONIAL HOSPITAL.

Colonial Hospital,

23rd March, 1900.

SIR,

I HAVE the honour to forward the Annual Report on the Colonial Hospital for the year 1899.

Chief Diseases Treated.—Malarial fever, with its associated manifestations, *e.g.*, cachexia, anæmia, &c., lead as usual. The death-rate from malarial fever *per se* was low.

There were 28 cases of *Acute Dysentery* admitted from the German warships "Moltke" and "Stosch"; of these two died; one remained on to the end of the year, and is still in hospital as I am writing. The *post mortems* of the two who died were typical of gangrenous dysentery as is seen in the worst form of this disease when epidemic. The large intestines were gangrenous and the small much congested throughout. The disease was said to be due to the drinking of impure river water previous to the ships' arrival at Trinidad. The other cases were discharged cured. The one that remained showed symptoms of typhoid in addition to those of dysentery, *viz.*, intestinal hæmorrhage, and prolonged convalescence. Several drugs were used in these cases. Tanalbin did good in a few, salol and quinine also acted beneficially. Magnes. sulph. was not successful.

There were 12 deaths from *Septicæmia* as a result of extravasation of urine and cases of labour occurring outside the hospital which had not been properly attended to before admission.

Tuberculosis gave 135 deaths for the year. This disease appears to be much on the increase, the tendency being to run a rapid and fatal course. Whether the cause of the disease here could be traced to the consumption of tuberculous animals is a matter for further investigation, but it is well known that the drinking of milk from, or the eating of the flesh of animals suffering more or less from tubercle is condemned as inimical to health, and that the commonest disease amongst inbred poultry is known on *post mortem* evidence to be pulmonary tuberculosis.

Unusual cases of Poisoning.—There were five cases of ptomaine from eating tinned food; five from cassava, and three from nuxvomica or the physic-nut; all the cases did well.

Yaws.—This disease is very much to the fore, and would appear to be either on the increase or that the cases are being carefully collected. Sometime in July I began to use guaiacol in

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this disease, pushing the dose of the pure guaiacol to 15 min. 3^{cs} daily. I have had no bad effects; the urine has been partly coloured in some, but got clear on stopping the drug for a few days. The results have been beyond my best expectations. Within three days the effect of the drug is noticed. From July to the end of the year, I discharged 11 cases; eight were put under guaiacol from admission. The average stay of these was 48 days; the longest being 130, and the shortest 14 days. This last case came in a cripple from the yaws tubercles on the soles of his feet; he left walking quite strong without a sign of the disease locally. Of the eight, five were discharged cured; three absconded not quite cured. Of the remaining three cases, one was nine months in hospital; four months under arsenic and iodide of potassium with little effect on the disease, and five months under a combined treatment of the above and thyroid tabloids—he was discharged only relieved; one had thyroid tabloids for 163 days, and yaws mixture 41—he absconded after 204 days' treatment, without guaiacol, relieved. The third case had thyroid tabloids for three months, yaws mixture one month, very slight improvement. Guaiacol was then given for 137 days, and he was discharged cured.

Arsenic and Iodide of Potassium are uncertain in their results, and always require prolonged treatment, so much so that one is inclined to doubt whether the drug has any effect on the course of the disease. *Mercury* has some controlling effect on the disease, but the drug has to be pushed to its utmost toleration to obtain it. *Thyroid tabloids* appear to do good, but its action is neither certain nor constant.

I have, &c.,

E. A. GAYNES DOYLE,

Resident Surgeon.

The Honourable

THE SURGEON-GENERAL.

No. 3 DISTRICT, TOBAGO.

No. 3 District, Tobago,

26th January, 1900.

SIR,

I HAVE the honour to forward you the Report on the Health of my District during the year 1899.

Yaws.—This disease prevails to a very great extent in my District, fully 15 per cent. of the population being afflicted with

it. I attend between 300 and 400 cases weekly. The attendance at the various stations was various satisfactory. I received every assistance from the energetic yaws constables, Eli Wallace, John Edwards, Paul Bennet, and William C. James. The number of persons affected remains constant, for no sooner are some of those under treatment cured, when fresh cases apply for attendance. Every village in my District contains numbers of yaws cases, and hence the healthy are always exposed to contagion.

Whooping-Cough.—Two deaths occurred from this disease, but there was no epidemic of the malady this year.

Marasmus.—The number of children who suffer and die from marasmus is very great. I have done my utmost to instil in the minds of the peasantry the simplest principles and practice of feeding infants and children, but with no measure of success. I am much afraid, therefore, that this disease will continue to swell the infant mortality.

Malaria.—In the later months of the year, malarial fever (remittent), was rather prevalent. It was, however, of a mild type.

I have, &c.,

THOMAS B. KENNY,
District Medical Officer.

The Honourable

THE SURGEON-GENERAL.

WINDWARD DISTRICT (No. 4) TOBAGO.

Tobago,
12th February, 1900.

SIR,

As requested in your Circular, No. 299, dated January 18th, 1900, and received by me on the 25th, I have the honour to forward for your consideration the annual Health Report of this District.

I am unable to furnish an exact return of the number of paupers treated in the District during the past year, as, previous to my appointment, Dr. Lassalle was in charge of the District for a short time, but since my tenure of office the number attended has averaged about seventy per month.

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—

The diseases which were most prevalent—I quote them in the order of their frequency, were:—

- 1.—Malarial fever and its complications.
- 2.—Yaws.
- 3.—Diseases of malnutrition, chronic ulcers, anæmia, &c., frequently a sequel to yaws.
- 4.—Vermes.
- 5.—Acute dysentery and diarrhœa.
- 6.—Whooping-cough.
- 7.—Diseases of women.
- 8.—Diseases of children.
- 9.—Other general diseases.

Malarial Fever was very prevalent throughout the entire District, if anything occurring most commonly in that district lying between the "Military Road" and "Louis D'Or" estate, and comprising "Kendal Place," "Moerawe," "Argyle," "Roxburgh," and "Louis D'Or" Settlement.

Yaws is also of very general occurrence throughout the District.

During 1899, there were 390 cases treated, and 60 discharged as completely cured. The general condition of the remainder who have been under treatment for any time shows a marked improvement. From their generally improved condition I anticipate that there will be a larger percentage of cures for this year.

Diseases of Malnutrition.—These form a large class, and are represented principally by chronic ulcerations, anæmia, debility, &c. They are largely a sequel of yaws aggravated by poverty of diet. They show, as a rule, a marked reaction to tonic treatment; but, I regret to say relapse almost equally readily, when the patients are again exposed to their former adverse conditions of life. This is especially so among the aged.

Vermes.—Lumbricoid worms are most extraordinarily common among young children; probably it is no exaggerated estimate to say that at least 75 per cent. of children under eight are so affected. Other varieties do not occur with sufficient frequency to warrant special mention. Very few cases of ancylostomiasis have come under my notice. My opportunities for observations, however, have been small.

Acute Dysentery and Diarrhœa.—Cases of acute dysentery and diarrhœa were very common from June to November. Some of the former were of an extremely severe type.

The disease seems to have practically exhausted itself, cases of the kind being rare now.

Whooping-Cough.—This was prevalent throughout the District during the greater part of the year.

It was of a comparatively mild type, and is now practically extinct.

Diseases of Women.—There was nothing of special note with regard to these. The percentage of cases was not larger, I should consider, than was to be expected.

Diseases of Children.—The disorder most frequently affecting children was, undoubtedly, vermes. Next to this came malarial fever, principally of the intermittent type. There were, moreover, a considerable number of cases of gastric and alimentary disorders, due mainly to improper feeding.

Other General Diseases.—Among other diseases none call for special mention.

In conclusion, I am of opinion that, satisfactory as the general health condition of the District is, improvement is not only possible, but to be expected, as the diseases most frequently met with were not of very varied character, but arranged themselves into groups to a large extent due to preventable causes.

The chief of these, malaria, will no doubt be greatly modified by the cultivation and better drainage of the swampier districts. A good deal could also be done at comparative small cost by the introduction of Eucalyptus trees into the neighbourhood.

As the chief of the other diseases are greatly modified, if not in part actually occasioned by improper food and uncleanly habits on the part of the people themselves, it is to be hoped, that the material and moral improvement in their condition which is to be anticipated under the more favourable political and economic conditions which at present exist, will effect such a regeneration in their mode of life as will itself go far to do away with them.

Apologising for the unavoidable delay in forwarding this Report.

I have, &c.,

J. FRANK GIBBON,

District Medical Officer.

The Honourable

THE SURGEON-GENERAL.

ARIMA YAWS HOSPITAL.

Arima,

20th February, 1900.

SIR,

(a.) I HAVE the honour to forward my first annual Report on the working of the Arima Yaws Hospital during the year

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1899, together with returns showing number of cases treated, &c.

(b.) The hospital, which was opened in the month of May, 1899, is situated on a rising piece of ground on the Eastern Main Road, between Arima and Dabadie.

It contains accommodation for 25 patients—10 males and 15 females and infants; there are besides, a kitchen, store room, bath room, and two cesspits with concrete bottoms and trap doors. The grounds are extensive and have been planted up with crotons, provisions, &c., and present rather a neat appearance.

(c.) The drainage is somewhat defective at present, but this could not be attended to, as it would have necessitated the laying of concrete drains where the proposed extension is to take place.

The other sanitary arrangements are good.

(d.) The water is now supplied by a pipe from the Arima main, and it is plentiful and excellent in quality. The dietary is sufficient in quantity and good in quality, and the patients readily partake of it.

(e.) Although there is only accommodation for 25 patients, yet the daily average in hospital was 31.

As most of the patients, however, were infants from two to 10 years, no serious inconvenience was felt. The conduct of some of the bigger boys was bad at times, and severe measures had to be resorted to. In one case the culprit remained three days in the police cells, and had to find a surety for his future good conduct. Perhaps it would be desirable to add a disciplinary clause to the Yaws Hospital Regulations.

(f.) Amongst those discharged as cured, were seven indentured immigrants who were returned to their estate hospital whence they were subsequently discharged as cured, and three other patients, who for various reasons had to leave the hospital before they were completely cured, but also attended as out-patients and were in due time discharged in good health. So that out of a total of 112 admissions, 67 were discharged cured, or about 70 per cent.

(g.) The general improvement of the patient must be secured when necessary, before resorting to any special treatment. Moreover, strict hygienic rules, bathing and a nutritious diet are, I consider, essentials in the treatment of yaws. "Donovan's" solution either alone or in combination with cinchona or syrup of iodide of iron, is responsible for most of the cures in children. Of course, this drug has already stood the test of many years, and it is undoubtedly the ideal treatment for yaws in children. It is well borne and its dose can be rapidly increased without any ill effect. Iodide of potassium and mer-

cury in combination have been also used amongst the adults, especially in those cases where tertiary syphilis co-exist. Thyroid extract and carbonate of guaiacol were tried at the Colonial Hospital, and I determined to give both these drugs a trial. Out of twenty cases (and very severe cases indeed), in which thyroid extract was given, 13 cases were cured at the end of the year, with an average stay of about eight weeks each; six cases are still under treatment, and are rapidly improving, and the remaining case, a rather remarkable one, as it is complicated with lupus and ringworm, has shown no signs of improvement, although one would have imagined that it was just the most suitable case for thyroid treatment, considering the presence of lupus in the patient.

I must here, however, add, that the above case has been under my constant observation for twelve months, and has baffled all my efforts at treatment. Under this drug, the tubercles rapidly disappear, and the general health of the patient seems to improve. In some cases up to nine and ten tabloids were administered daily.

I cannot speak yet of carbonate of guaiacol with any degree of certainty, but as far as I can observe at present, I think this drug is likely to be a very serviceable one. Will these cases be permanent? This will be only definitely settled by time, and in my next Report, I hope to be able to supplement this with some further figures.

(h.) Two relapses took place after apparent cure. From a rough record which I have kept for the past three years, I estimate that relapses occurred in at least 10 per cent. of my cases.

(i.) Every Monday out-patients are attended to, and on the same day the discharged patients also occasionally report themselves, so as to make sure that the cure is complete. 190 cases were attended to during the year, 112 being admitted to hospital, and 78 treated as out-patients. Of that total 103 were cured. 58 cases came from the small village of Dabadie. This was formerly a hot-bed of yaws; but I am pleased to be able to state that it has now practically ceased to exist there.

During this year it is expected that most of the cases will hail from the Manzanilla District, where at present a good many exist.

I have, &c.,

F. A. DE VERTEUIL,

District Medical Officer.

The Honourable

THE SURGEON-GENERAL.

TRINIDAD

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1899.ADMISSIONS, DISCHARGES, AND DEATHS OF PATIENTS DURING THE
YAWS

Months.	Colonial Hos- pital.			San Fernando Hospital.			DISTRICT								
	400 Beds.			144 Beds.			St. Joseph. 40 Beds.			Tacarigua. 34 Beds.			Arima. 24 Beds.		
	Admitted.	Discharged.	Died.	Admitted.	Discharged.	Died.	Admitted.	Discharged.	Died.	Admitted.	Discharged.	Died.	Admitted.	Discharged.	Died.
January	605	559	85	251	199	23	36	30	5	32	24	6	41	35	4
February	514	430	57	204	198	22	33	30	5	34	28	6	32	31	4
March	519	498	67	193	185	21	39	43	4	22	22	3	34	24	6
April	434	480	60	165	154	22	42	37	6	28	27	2	21	27	—
May	385	341	66	155	142	20	23	25	5	37	34	5	32	24	3
June	411	328	49	163	143	21	7	13	1	41	31	3	23	24	1
July	454	415	51	165	127	31	11	11	—	37	42	4	30	23	3
August	470	375	67	207	170	23	19	15	3	56	41	6	36	35	3
September	509	452	67	204	200	22	22	19	3	46	27	9	41	43	4
October	565	475	56	250	223	13	27	17	3	47	50	9	33	23	4
November	499	456	57	205	185	20	22	16	7	31	25	7	46	40	4
December	533	425	76	175	179	23	24	21	1	45	30	8	36	35	4
Total	5,898	5,234	758	2,337	2,105	261	105	277	43	456	381	68	405	364	40

Total number remaining in Hospitals on 31st December, 1898 807

" " admitted during the year ended 31st December, 1899 10,611

Total number treated during the year 1899 11,418

Number discharged during the year ended 31st December, 1899 } 9,379

" died " " " " } 1,360 10,739

" remaining in Hospitals on 31st December, 1899 679

Daily average number in Hospitals in 1899 686

Percentage of deaths on number treated during 1899 11.91

YEAR 1899, AT THE COLONIAL, SAN FERNANDO, DISTRICT AND HOSPITALS.

AND YAWS HOSPITALS.

Chaguanas. 30 Beds.			Couva. 40 Beds.			Princes Town. 30 Beds.			Cedros. 20 Beds.			Tobago.			Arima Yaws. 25 Beds.			Total.		
Admitted.	Discharged.	Died.	Admitted.	Discharged.	Died.	Admitted.	Discharged.	Died.	Admitted.	Discharged.	Died.	Admitted.	Discharged.	Died.	Admitted.	Discharged.	Died.	Admitted.	Discharged.	Died.
35	36	5	41	32	11	23	22	4	10	2	1	5	1	2	—	—	—	1,079	940	146
36	24	6	38	33	2	24	21	5	3	4	1	4	2	2	—	—	—	922	801	110
36	29	6	38	42	5	25	21	2	8	5	—	7	1	1	—	—	—	921	870	115
26	28	6	23	25	5	22	20	6	7	4	1	3	5	—	—	—	—	771	807	108
28	27	5	19	19	2	26	21	2	11	9	2	4	6	—	32	5	—	752	653	110
20	12	7	32	29	2	25	23	3	5	7	2	4	3	1	9	10	—	740	623	90
23	22	2	32	16	14	24	20	6	3	6	1	6	9	—	12	9	—	797	700	112
25	17	4	36	30	3	21	17	2	6	—	1	6	6	1	13	7	—	895	713	113
17	15	4	21	20	5	31	22	7	4	7	1	8	3	1	12	7	—	915	815	123
11	14	2	27	20	5	33	26	3	8	4	4	8	8	1	6	10	—	1,015	870	100
13	14	1	33	28	5	23	19	3	4	6	—	4	4	2	11	22	—	891	815	106
18	15	5	30	24	4	28	28	4	3	4	1	4	4	1	17	7	—	913	772	127
288	253	53	370	318	63	305	260	47	72	58	15	63	52	12	112	77	—	10,611	9,379	1,360

Deaths occurring within the undermentioned periods after admission.

24 Hours.	2 Days.	3 Days.	1 Week.	2 Weeks.	1 Month.	3 Months.	Over 3 Months.	Total.
142	138	175	224	190	252	134	105	1,360

F. LOVELL,
Surgeon-General.

Return of the Statistics of Population for the year 1899.							
TRINIDAD AND TOBAGO, 1899. <hr/>	Number of inhabitants in 1898	...	...	...	...	...	260,517
	„ Births during the year 1899	...	...	...	9,654	...	
	„ Deaths „ „	...	...	...	6,495	...	3,159
	„ Immigrants during the year 1899.	...	...	...	21,073	...	
	„ Emigrants during the year 1899.	...	...	...	15,271	...	5,802
	„ Inhabitants in 1899	...	...	...	...	...	269,478
	Increase	...	...	...	...	...	8,961
	Decrease	...	...	...	...	...	...

RETURN of DISEASES and DEATHS in 1899 at the following INSTITUTIONS :—COLONIAL HOSPITAL; SAN FERNANDO; DISTRICT HOSPITALS—ST. JOSEPH, TACARIGUA, ARIMA, CHAGUANAS, COUVA, PRINCES TOWN, CEDROS, TOBAGO, and YAWS HOSPITAL, ARIMA.

TRINIDAD
AND
TOBAGO,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES—			
Vaccinia	1	—	
Measles	1	—	
Whooping Cough	1	1	
Influenza	12	—	
Diphtheria	—	1	
Febricula	1	—	
Enteric Fever	21	29	
Cholera	—	—	
Dysentery	215	94	
Kakké	1	—	
Malarial Fever—			
(a.) Intermittent	963	2	
(b.) Remittent	289	50	
(c.) Pernicious R... ..	41	10	
Phagedœna	—	1	
Erysipelas	13	3	
Pyæmia	1	—	
Septicœmia	4	13	
Tetanus	5	25	
Tubercle	35	31	
Leprosy—			
(a.) Tubercular	35	1	
(b.) Anæsthetic	83	7	
Yaws	166	—	

TRINIDAD
AND
TOBAGO,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
GENERAL DISEASES— <i>cont.</i>			
Syphilis—			
(a.) Primary	21	—	
(b.) Secondary	40	—	
(c.) Inherited	58	10	
Gonorrhœa	185	—	
Hydrophobia	—	1	
Scurvy... ..	—	—	
Alcoholism	31	1	
Delirium Tremens	3	—	
Rheumatism	200	—	
Rheumatic Fever	—	—	
Gout	1	—	
New Growth, non-malignant	65	2	
New Growth, malignant	23	9	
Anæmia	681	74	
Hæmophilia	1	—	
Diabetes mellitus	6	2	
Diabetes insipidus	—	—	
Premature Birth	5	22	
Debility	309	61	
Old Age	66	68	
LOCAL DISEASES—			
DISEASES OF THE NERVOUS SYSTEM—			
Sub-section 1—			
Diseases of the Nerves—			
Neuritis	3	—	
Hæmorrhage... ..	7	6	
Meningitis	2	3	
Locomotor Ataxia	2	—	

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES— <i>cont.</i>			
DISEASES OF THE NERVOUS SYSTEM— <i>cont.</i>			
Sub-section 1— <i>cont.</i>			
Myelitis	—	1	
Hydrocephalus	7	4	
Encephalitis	1	—	
Abscess of Brain	1	1	
Congestion of Brain... ..	2	4	
Softening of Brain	—	1	
Sub-section 2—			
Functional Nervous Disorders—			
Apoplexy	4	9	
Paralysis	67	5	
Eclampsia	15	19	
Chorea	2	—	
Torticollis	1	—	
Epilepsy	45	2	
Tetany	—	1	
Neuralgia	65	—	
Hysteria	20	1	
Neurasthenia	2	—	
Sub-section 3—			
Mental Diseases—			
Idiocy	1	—	
Mania	34	—	
Melancholia	15	—	
Dementia	27	—	
Delusional Insanity	—	—	
Diseases of the Eye	201	—	
" " Ear	10	—	

TRINIDAD
AND
TOBAGO,
1899.

Diseases.	Yearly Total.		Remarks.
	Cases.	Deaths.	
LOCAL DISEASES— <i>cont.</i>			
Diseases of the Nose	26	—	
" " Circulatory System	97	27	
" " Respiratory "	676	274	
" " Digestive "	781	267	
" " Lymphatic "	37	—	
" " Urinary "	268	118	
" " Generative "	—	—	
" " Male Organs ...	288	6	
" " Female Organs ...	224	16	
Affections connected with Pregnancy	71	1	
" " " Parturition	281	5	
" consequent on "	23	2	
Diseases of the Female Breast ...	32	2	
" " Organs of Locomotion	102	2	
" " Cellular Tissue ...	209	1	
" " Skin	709	8	
Injuries, General	92	23	
" Local	594	7	
Surgical Operations	—	—	
Malformations	3	—	
Poisons	37	3	
Ankylostoma	188	23	
No appreciable disease	524	—	
Total for Year	9,379	1,360	

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